REPORT RESUMES

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DIMENSIONS OF ADMINISTRATIVE PERFORMANCE.
BY- HEMPHILL, JOHN AND OTHERS
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THE MAJOR OBJECTIVES WERE TO DEVELOP CRITERIA FOR THE EVALUATION OF SCHOOL ADMINISTRATION, TO DEFINE THE NATURE OF THE JOB, AND TO DEVELOP AN INSTRUMENT FOR THE SELECTION OF ADMINISTRATORS. THE ELEMENTARY SCHOOL PRINCIPAL WAS CHOSEN FOR THE STUDY BECAUSE OF THE HOST OF PROBLEMS RELATED TO THE CONDUCT OF AN EDUCATIONAL PROGRAM, INCLUDING THE SELECTION, TRAINING, AND SUPERVISION OF PERSONNEL, THE MAINTENANCE OF PHYSICAL FACILITIES, THE CONTROL OF SUPPLIES, AND RELATIONSHIPS BETWEEN THE SCHOOL AND THE COMMUNITY. A SIMULATION OF AN ELEMENTARY SCHOOL CREATING A STANDARD ADMINISTRATIVE SITUATION WITH SPECIAL JOB SAMPLE TESTS, KINESCOPES, AND TAPE RECORDINGS WAS USED. TESTS OF ABILITIES, KNOWLEDGE, INTERESTS, AND PERSONALITY WERE SELECTED, AND OTHER INSTRUMENTS WERE CONSTRUCTED TO OBTAIN INFORMATION REGARDING THE EXPERIENCE, TRAINING, AND PERFORMANCE OF THE SUBJECTS. CENTERS WERE SET UP IN VARIOUS PARTS OF THE COUNTRY FOR TESTING 177 PRINCIPALS AFTER A PRELIMINARY TEST OF 55 PRINCIPALS. THE RESULTING DATA WERE ANALYZED AND COMPARED WITH THE RATINGS OF THE PRINCIPALS' PERFORMANCES MADE BY THEIR OWN SUPERIORS AND WITH OTHER MEASURES OF THEIR SUCCESS AS ADMINISTRATORS. THE ANALYSIS INDICATED THAT SIMULATION OFFERS AN EXCELLENT METHOD OF TEACHING SKILLS TO INSERVICE SCHOOL PRINCIPALS AND SUPERINTENDENTS, EXPLAINING THE NATURE OF THE JOB, AND SELECTING SCHOOL ADMINISTRATORS. (GC)

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Dimensions of Administrative Performance

JOHN HEMPHILL
DANIEL GRIFFITHS
NORMAN FREDERIKSEN
GLEN STICE
LAURENCE IANNACCONE
WILLIAM COFFIELD
SYDELL CARLTON

TEACHERS COLLEGE, COLUMBIA UNIVERSITY *and*
EDUCATIONAL TESTING SERVICE

The research reported herein was performed under Contract No. 214 (6905) with the Cooperative Research Branch, United States Office of Education, Department of Health, Education, and Welfare.

MAY 1961

DIMENSIONS OF ADMINISTRATIVE PERFORMANCE

John Hemphill
Daniel Griffiths
Norman Frederiksen
Glen Stice
Laurence Iannaccone
William Coffield
Sydell Carlton

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May 1961

Research Staff

Director

Daniel E. Griffiths, Teachers College, Columbia University

Associate Director

John Hemphill, Educational Testing Service

Research Associates

Norman Frederiksen, Educational Testing Service
Glen Stice, Educational Testing Service
Laurence Iannaccone, Washington University, St. Louis
William Coffield, University Council, Educational Administration
Richard Lonsdale, Syracuse University
George Holloway, University of Buffalo
D. Richard Wynn, University of Pittsburgh

Research Assistants

Douglas Dean, Educational Testing Service
Sydell Carlton, Educational Testing Service
Patricia Sheehan, Educational Testing Service
Robert Hallsted, Teachers College, Columbia University
James Ramey, Teachers College, Columbia University
Eleanor Donald, Teachers College, Columbia University
C. Eugene Kratz, Teachers College, Columbia University

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ACKNOWLEDGMENTS

A detailed history of the management of a large research project would add much to the understanding of its purposes and design. The history of this project might be of special interest because of the manner in which the work of many researchers was coordinated to make an integrated project. This short account of how the study was supported, both by the efforts of many people and by grants of research funds, will not be such a detailed history; but it will help provide a setting for the report which follows.

The project was initiated by Norman Frederiksen, Director of Research for the Educational Testing Service, who developed the "in-basket" technique for studying the administrative performance of Air Force officers. He believed that the technique might be useful in studying the work of many other types of administrators. John Hemphill worked with him to outline a proposal to study school administrators. As plans developed a number of leaders in the field of school administration were consulted, and they expressed much interest in the proposed project. Professor Daniel Davies, Teachers College, Columbia University, who at the time was the executive director of the organization which has become the University Council for Educational Administration, was particularly helpful in the early stages of initiating work on the project. Plans were made for Teachers College and Educational Testing Service to work cooperatively on the research. Daniel Griffiths was designated to work with Frederiksen and Hemphill, and together they developed the final proposal which was approved for support by the United States Office of Education, Cooperative Research Branch.

The study had the good fortune to receive financial support from several sources. A major grant for the support of the study was made to Teachers College by the Cooperative Research Branch of the United States Office of Education (O.E. Contract No. SAE-6905). Participation of Educational Testing Service was arranged through a sub-contract with Teachers College. Another grant by the Kellogg Foundation permitted the completion of several important analyses which were not a part of the basic research contract. The development of the scoring system, described in Chapter VI, was partially supported by the Office of Naval Research under contract Nonr-2338(00) with Educational Testing Service. Educational Testing Service and Teachers College, Columbia University, each made substantial financial contributions to the project. The school districts from which the subjects of the study came contributed to the cost of maintaining the test centers (see Table II-1). Support from the Kellogg Foundation, the University Council for Educational Administration, and the Committee for the Advancement of School Administration is helping to make possible the publication of the final report by the Teachers College Bureau of Publications.

This study could not have been undertaken without the unselfish cooperation of the 232 elementary school principals. Each principal volunteered to spend five difficult days away from his home in order to participate in the study. In addition, he exposed himself to two days of searching examinations, tests, and questionnaires. The importance of the contributions to the study of each of the principals, whose names are given in Appendix B, can never be fully appreciated.

During the course of the study, the project staff obtained professional advice from a number of appropriate sources. On two occasions it was found necessary to gain the advice of elementary school principals, and a committee was formed for this purposese. A national advisory committee was employed to view the study as a whole. The members of these committees are listed in Appendix C.

Arrangements were made with several members of the University Council for Educational Administration to provide personnel and services. The Council was especially helpful in setting up the test centers. The following faculty members of UCEA institutions rendered valuable assistance in the establishment of centers in their areas: Dr. Howard Bretsch, University of Michigan; Dr. John Davis, Harvard University; Dr. Oliver Gibson, Harvard University; Dr. Vynce Hines, University of Florida; and Dr. Robert Howsam, University of California.

Professors E. Edmund Reutter, Jr., Teachers College, Columbia University, and Lee Garber, University of Pennsylvania, wrote the Experimental Edition of Excerpts from the School Codes of Lafayette.

Supplemental analyses of biographical information and of writing samples were made by Professor Andrew Halpin, University of Utah, and will be reported separately.

The kinescopes, described in Chapter IX, were developed under the direction of Dr. Sherwin Swartout at the State University of New York, College of Education, Brockport. Fergus Currie, Teachers College, developed the method for evaluating the tape recorded speeches described in Chapter X and scored each of the speeches.

A number of doctoral studies related to this project were completed or are in progress. Those who completed studies are Laurence Iannaccone, C. Eugene Kratz, and James Ramey.

Professor Ledyard Tucker, formerly of ETS and now at the University of Illinois, served frequently as a consultant on many complicated problems of the analysis. Robert Ebel, Fred Damarin, and Arthur Benson of ETS made many useful suggestions for improvement of the report after reviewing an early draft of the manuscript. Henrietta Gallagher, ETS, gave many hours of her time to the important task of translating plans for analyses into computer operations. Sally Matlack and Ann King, ETS, and Lois Brown, Teachers College, supervised the typing and preparation of the final report. Mention should also be made of the many contributions made by Betty Watson, Eleanore Witt, and Mary Emerich, secretaries to the project during the course of the study.

It is impossible to include a complete list of those who contributed in other ways to the study. These persons number in the thousands and include among others all the teachers who filled out questionnaires, supervisors who completed rating forms, clerks who scored and processed data, persons who substituted for the principals while they were away, and superintendents who were involved in administrative decisions which permitted the study to be done.

DIMENSIONS OF ADMINISTRATIVE PERFORMANCE

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CHAPTER I

INTRODUCTION TO THE STUDY

Although administration is a characteristic of all organized effort, relatively little is known of its nature and even less of its dimensions. This book is a report of a study designed to explore the performance of those holding one important administrative position -- the elementary school principalship in the public schools of the United States.

The administrative performance of the elementary school principal was chosen for study because of the high degree of interest in the problems associated with it. Boards of education, superintendents of schools, and the general public are demanding improved methods of educating and selecting school principals and of improving the administration of schools.

The elementary school principalship is a highly strategic position. The principal is faced with a host of problems related to the conduct of an educational program, including the selection, training, and supervision of personnel; the maintenance of physical facilities; the control of supplies; and relationships between the school and the community. The problems that he sees and what he does about them influence the quality of education received by every child in his school. With the rapid changes in society, the steady expansion of knowledge, and with the mounting population pressures, the position is becoming more and more complex. Increases in our understanding of the administrative performance of elementary school principals may not only improve our schools, but may also add to our knowledge of administration in other areas.

Historical Background

A review of the literature concerning school administrator selection was undertaken as one of the first steps of the study.[1] This review covered 144 sources which appeared during the period 1839 to 1958. All but three were reported in the present century, with the majority appearing since World War I.

The literature on the selection of school administrators can be categorized in three historical periods. The first period began with a few studies before the turn of the century and continued through World War I. The second period began at the end of World War I when the major interest in the selection of school administrators turned to the specification of standards and qualifications for positions in school administration. About 1948 a third period began which was characterized by searches in new directions for methods of selection of administrators.

Studies from the First Period to 1918

The first period is typified by two studies, one by Cubberly, the other by Theisen. Cubberly concluded that the duties of the superintendent were [2]

> Organizer and director of the work of the schools, executive officer of the school board, supervisor of instruction, leader of the staff, arbiter between the staff and the board.

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[1] Ramey, James W. A Review of School Administrator Selection Research Unpublished Ed.D. Project, Teachers College, Columbia University. See Appendix A of this report for a listing of the studies reviewed.

[2] Cubberly, E. P. "Superintendent of Schools." Elementary School Journal, Vol. 16, November 1915, p. 149.

Theisen's 1917 study of school board rules and regulations concluded that the most critical function of the school board was the choice of a superintendent of schools.3/

Studies from the Second Period, 1918-1948

In the second period studies are found which focus on two questions: What makes a successful school administrator? and What qualifications should be possessed by candidates for school administrative posts? The search for the answers to these questions proceeded in two directions: (1) studies describing school administrators, especially those considered successful, and (2) surveys of opinions about the desirable qualities of school administration held by persons involved in education, ranging from school board members to the children in public schools, from college presidents to P.T.A. members.

Research of the first type employed status studies of selection requirements, qualifications of incumbents, and analyses of procedures for selection. In studies using opinion surveys, a wide variety of individuals were asked what they thought a successful administrator was like or what the requirements for selection should be.

Studies from the Third Period, 1948-1958

The third period of research on qualifications and selection of school administrators was characterized by a search for new ways of understanding the job of administrator and for the necessary qualifications or criteria for selection. This period by no means breaks sharply with what had become the traditional method for studying

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3/ Theisen, W. W. The City School Superintendent, Contributions to Education, No. 84. New York: Teachers College Bureau of Publications, 1917.

qualifications in the field of educational administration, but it can be distinguished by the appearance of new directions that began to be explored after World War II. Partly because of dissatisfaction with the small returns to that time and partly under the influence of Kellogg grants, studies were undertaken which emphasized the experimental use of psychological tests, the study of leadership, the use of the critical incident technique, and other methodological departures from educational administration's past.4/ The focus of theoretical discussions began to shift from an emphasis on traits of administrators to an emphasis on the behavior of administrators in school situations.5/

One other characteristic displayed by these newer approaches was an interest in analyzing the administrative situation. Local control of education in America results in local variations in school organization. At present there is no useful system for the classification of different school characteristics which would make it possible to hold situational factors constant in a study of administrative behavior.

With the bankruptcy of the search for administrative qualifications on the one hand and with the variety of communities and schools on the other, most attempts to determine criteria of success for school administrators have been singularly unsuccessful.

Problems in Studying Administrative Behavior

The design of the present study was influenced by knowledge of the difficulties and frustrations of past research.

4/ Moore, Hollis. Studies in School Administration, Washington: American Association of School Administrators, 1957.

5/ For a description of this development, see: Roald Campbell and Russell Gregg, eds. Administrative Behavior in Education, New York. Harper and Brothers, 1957.

Lack of Criteria

The usual criterion employed to evaluate the effectiveness of performance in studies of administrative behavior is a rating or set of ratings made by superiors.

The weaknesses of criteria of this sort are well known. Judges may view those to be judged using frames of reference that differ according to their values, experiences, and training. What is "good" behavior to one judge may be "poor" to another. Furthermore, the ratings often involve the assumption that the performance is one dimensional, varying from "good" to "bad." Such a view vastly oversimplifies the problem. Obviously more dependable criteria of effective administrative performance are required if the many problems involving identification of the abilities required of school administrators or the selection of potentially effective principals are to be solved.

Lack of Concepts

The language of research in administrative behavior is another source of difficulties. We do not have serviceable concepts with which to describe what is observed.

We are plagued with the problems of ill-defined concepts and are thus handicapped in our efforts to describe administrative situations. Even the most sophisticated students of school administration must resort to homely parables and analogies to talk about administration. As Simon says 6/

> We talk about organization in terms not unlike those used by a Ubangi medicine man to discuss disease. At best we live by homely

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6/ Simon, Herbert. Administrative Behavior, 2nd Ed., New York: Macmillan, 1957, p. xiv.

> proverbs: 'The important thing about organization is to have the right man in the right place.' At worst we live by pompous inanities: 'The relationship between delegant and his deputy arises from delegation and is invariable in character.'

The lack of appropriate concepts has made it very difficult to adequately describe administrative situations or administrative behavior.

Operational Difficulties

It seems obvious that researchers must look at administrators at work if they are to gather the most relevant data. Making such observations presents serious problems for the research worker. The cost of observing a large number of administrators over a period of time is exorbitant; but even if the cost obstacle could be overcome, other problems must be faced.

The presence of the observer has long been recognized as an added variable in the maze of factors which influence behavior. Efforts to overcome the effects of the presence of an observer have not been entirely successful. Not only does the observer change the situation merely by being in it, but different observers perceive the same situation quite differently. Each observer tends to have his own frame of reference within which he interprets what he sees.

Situational Differences

A major difficulty in the study of administrative behavior is the fact that every administrative situation varies from every other situation. This fact may lead to conflicting conclusions about administration; it may be impossible to tell to what extent behavior is a function of the situation or of the administrator. Many researchers who have employed survey techniques have either ignored this difficulty or have contended that through the use of simple statistics the effects of different situations can be ruled out. Those who employ the case method of study often are prone to overgeneralize from one or two cases. When situations are compared, the variables involved are not only difficult to control; they may even be unknown to the researchers.

Lack of Quantification

One outgrowth of the lack of operational concepts has been the great difficulty in quantifying observations obtained in the study of administration, which imposes serious restrictions on the ways in which data can be handled. If the relationships among variables cannot be analyzed by quantitative techniques, there is little hope of determining precisely how they interact and influence one another.

These methodological difficulties are part of the research background that is relevant to the design of the present day research study. From a methodological point of view, the entire study may be understood as an effort to overcome the five major difficulties discussed above.

The Conceptual Framework

The conceptual framework of any study has two major aspects: that which is made explicit and is formally stated in terms of a theory, a model or a paradigm, and that which is implicit and contained unstated and perhaps unrecognized in the assumptions held by the researchers.

Theories Held by Researchers

The research project had, from its beginnings, a rather sizable research staff with backgrounds of different academic disciplines. The members of the staff had various orientations toward the place of theory in research. In addition, the interests of the staff were varied. For example, one member of the staff was especially interested in the relationships between personality factors and administrator performance, while another was concerned particularly with developing methods of observing administrators at work. An over-all conceptual framework was developed from these diverse backgrounds of interests and orientations. No attempt was made to force all views into an integrated or consistent single point of view. It is important, however, to identify the major theoretical views and basic interests which became involved in the research.

Administration as problem-solving--A theory of administration viewed as problem-solving had been proposed by one member of the research team.7/ According to this theory, insight into the nature of administration can be gained by studying the group problem-solving behavior of administrators. The theory is essentially a psychological approach that concentrates upon the behavior of the individual leader. It examines the relationship between the leader and the group and delineates the conditions that give rise to leadership acts.

Administration as decision-making--A theory which has been proposed by another member of the research staff, considered administration from the point of view of decision-making.8/ The theory defines and utilizes a set of concepts including decision-making, organization, perception, communication, power, and authority. It accounts for

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7/ For a more detailed discussion of this theory see Hemphill, John K. "Administration as Problem-Solving." Administrative Theory in Education. (Edited by A. W. Halpin.) Chicago: Midwest Administration Center, 1958, pp. 89-118.

8/ For a more complete discussion of this theory see Griffiths, Daniel E. Administrative Theory. New York: Appleton-Century-Crofts, 1959.

differences in administrative behavior in terms of variations in decision-making behavior and borrows from the work of Barnard and Simon.

Empirical Orientation

In addition to the two theoretical referents mentioned above, the research staff included members representing a third basic orientation, this being empiricism. The staff could accommodate two theories and, at the same time, admit an empirical point of view for two reasons. The first was a clear recognition of the inadequacy of the administrative theories; the second can be traced to advances made in modern computational methods.

Inadequacy of theories--It was readily admitted that neither of the theories presented above, nor for that matter any known theory of administration, was substantial enough to support a major inquiry of the sort projected. Theory building can best be done in the light of thorough familiarity with the phenomena which are in the domain of investigation. Administrative science is immature and constantly needs to examine its stock of theories in the light of empirical findings which may lead to the reformulation of present theories or the creation of new ones.

Modern computational methods--There was a strong belief in the research staff that modern computers are greatly influencing the nature of research in the behavioral sciences. As Wrigley has intimated, the advent of the computer may be as significant to the behavioral sciences as was the telescope to astronomy or the microscope to biology.9/ The

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9/ Wrigley, Charles. "Theory Construction or Fact-Finding in Computer Age." Behavioral Science, Vol. 5, No. 2, April 1960, pp. 183-186.

computer may be the aid that has long been needed to provide facts which can then be accounted for by theories. While school administration has few theories, it has still fewer facts.

There was agreement among members of the staff that the research should be primarily concerned with making observations of administrative behavior, and that it should attempt to relate these observations to many other variables as a means of gaining greater understanding of the observations.

Objectives of the Study

The objectives of the study developed out of the background of research in administrator qualifications and selection, the problems which have been encountered in the study of administrative behavior, and the conceptual orientation of the researchers. The study had three major objectives.

1. To determine dimensions of performance in the elementary school principalship and thus to develop a better understanding of the nature of the job of the school administrator.

This study is an effort to describe and understand the administrative behavior of elementary school principals. In order to describe this behavior, it is necessary to develop concepts which are consistent with the modern conception of operationism. The first objective of the study can be thought of as the development of concepts with which to describe the administrative behavior of the elementary school principal.

2. To provide information helpful in the solution of the problem of selecting school administrators.

Success in determining some measurable dimensions of performance in elementary school administration and knowledge of the relationships of these dimensions to other measurable characteristics of people may be expected to suggest practical procedures for the selection of principals.

3. To provide materials and instruments for the study and teaching of school administration.

The materials developed in the course of the project should be useful for the study and teaching of school administration. These materials, to be described in detail in later chapters, included motion pictures, a film strip, sound tapes, and a large number of situational test materials. The materials simulate a school within a school district; they provide a wealth of material for demonstration and discussion.

How the Study was Done

A standard administrative situation was constructed in which administrative behavior could be elicited, and observed or recorded. Important tasks from the job of the elementary school administrator were simulated and condensed within the period of one week. The details about how this simulation was accomplished will occupy a good part of the first few chapters of this report.

One of the more important means employed to simulate administrative tasks was the in-basket test. It is necessary to make clear what an in-basket test is. Everyone is familiar with the wire baskets or trays that administrators generally have on their desks to keep incoming and outgoing correspondence in order. An in-basket test is a collection of documents which have presumably accumulated in the in-basket of an administrator and which are awaiting his attention. The particular documents constitute the test items, and the action which the administrator takes with respect to the items are his responses to the test. Four in-basket tests were employed in the simulation of the elementary school.

It was possible to represent a very wide range of the tasks of the elementary school principal in the form of in-basket test items. However, several other methods of presenting tasks were also used in order to simulate problems involving more direct interaction with people. For example, each principal who participated in the study visited the classrooms of his probationary teachers via kinescope recordings, prepared and presented a speech to his P. T. A., and participated in a face-to-face group discussion. All of the various methods or techniques of simulating tasks were built into a hypothetical school, named Whitman School. Before the principals began their work on these tasks, they received a complete briefing on the school, its faculty, the school district, and the community.

In addition to the large amount of information that was obtained on the performance of the principals on the simulated administrative tasks, an almost equally large amount was obtained about each principal's abilities, personality, background, and performance in his home school. A major task of the study was the analysis and interpretation of the relationships among a large number of variables.

Organization of this Report

The report of this study is organized into 14 chapters. In order to give the reader an overview, the contents of each chapter is briefly described here.

Chapter II, How the Data Were Collected, is a description of the data gathering procedure, beginning with the first contact with the subject through the week spent at the test center.

Chapter III, Whitman School, is a discussion of the setting in which the in-basket items are placed. The characteristics of the community of Jefferson and of Whitman Elementary School are presented. Included is an analysis of the interaction, the sentiments, and attitudes of the faculty of the Whitman School.

Chapter IV, How Whitman School Was Constructed, describes in detail how the movie, the kinescopes, in-basket items, film strips, sound tapes, and all of the other materials were prepared.

Chapter V, The Participants in the Study, describes the sample used in the study. The subjects are compared with a nation-wide study recently completed by the National Education Association. Means and standard deviations are reported for the professional knowledge, general culture, personality, and interest tests administered to the subjects.

Chapter VI, Scoring the In-Baskets, presents the rationale for scoring in-basket materials. A central part of the chapter deals with the Scoring Manual, training of the scorers, the scoring categories, and quality control measures employed.

Chapter VII. Dimensions of Performance in In-Basket Work, deals with three questions: Can the adding of scores assigned to items to obtain a total score for each category be justified? How reliable are the category scores? Can the important differences in the subjects' performance be described with less than the 68 categories used in scoring the in-baskets?

Chapter VIII, Content of In-Basket Performance, contains a discussion of two "content" scores, Imaginativeness and Organizational Change, and their relation to other measures.

Chapter IX, Concerns and Values of the Elementary Principal, is a description, evaluation, and analysis of the subjects' concerns and values as revealed by three types of tasks: evaluation of the performance of teachers shown in kinescopes, solutions to a variety of situations depicting educational problems that were presented by taped recordings, and "examinations" on background materials.

Chapter X, Performance on Tasks of Social Interaction, presents a description, evaluation, and analysis of the subjects' behavior in a group interaction problem and a speech. These are tasks which require that the principals respond orally.

Chapter XI, Subjective Evaluation of Performance, provides an answer to the question, What are the characteristics of principals who are viewed as outstanding by their superiors, teachers, by scorers, and by members of the research staff?

Chapter XII, Relationships Among Measures of Performance, is a presentation of the correlations between in-basket performance measures and all other variables pertaining to the principals' abilities, personality, and performance.

Chapter XIII, Components of Administrative Performance, reports the results of an analysis of various components of the in-basket test performance factor. It summarizes the most significant findings of the study.

Chapter XIV, Implications of the Study for the Practice of Administration, summarizes the findings of the study and explores implications for new theories of administration. The chapter presents practical applications for the selection of school administrators, the practice of school administration and the preparation of school administrators; and it suggests further needed research.

CHAPTER II

HOW THE DATA WERE COLLECTED

The primary function of this chapter is to describe the events in a standard test week -- one of a series of weeks during which groups of approximately 20 each of the 232 principals who participated in the study left their regular work and came to a test center, each to serve as principal of Whitman School. During his week, each principal became acquainted with Jefferson, its school system, and the faculty and facilities of Whitman School. He handled a large number of administrative problems presented to him through a variety of methods selected and designed to make these problems real ones for him.

The following section gives a day-by-day account of the events of the test week. Later sections will describe the selection of subjects, selection of test, centers and the collection of other information about the participants in the study.

The Test Week: Day by Day

Program for Sunday Afternoon and Evening

As the principals arrived at the test center on the Sunday afternoon of the test week, staff members were on hand to meet them, to help them get established, and to acquaint them with the facilities of the center. The principals were then encouraged to join in whatever informal discussions and activities were in progress. Every effort was made by the staff to develop a friendly and informal atmosphere.

The staff members did not avoid talking about the test week. The principals were expected to be curious and somewhat apprehensive.

Sufficient information about the test week and about the study was given to reduce anxiety and to prepare the principals for the more formal introduction to the study on Monday morning.

The Supervisor's Manual for the administration of the test week contains the following guides regarding the impressions of the study which staff members were to give to the principals:

1. No report of any sort on individual performance will be given to anyone; data will be used only for research purposes.
2. This is an experiment. Until the value of the experimental materials is known, it would be unscientific and unethical to attempt to say anything about the goodness of an individual's performance.
3. This is a new kind of research. Most of the materials to be used this week have not been tried before. Principals may expect to find occasional inconsistencies. When this happens, we hope the intent will be clear and that the errors will not prove distracting. We hope also that any inconsistencies will be called to our attention.
4. The purpose of the research is to study the work of the elementary school principal. We hope to learn something about how different kinds of administrative behavior are related. We think we may find a number of consistent patterns of administrative behavior and that these patterns may be related to the background tests taken earlier.
5. We expect that the outcomes of this research may eventually lead to improvements in the basic understanding of administrative processes, in the content of college courses in educational administration, and in methods for selecting educational administrators.
6. Each principal will serve as principal of a hypothetical elementary school in an imaginary town in an imaginary state.
7. This imaginary school and community is based largely on a real school community. We have, however, changed a number of things about this community and have added parts from other communities. The school is a good school in a comfortable suburban community. Under no circumstances will the real community's identity be divulged.

Staff members used these general guides in their informal discussions with the principals on Sunday afternoon and evening and avoided revealing the specific content of the test week. At the end of a very short meeting with the principals following the evening meal, a pamphlet entitled, "Program for the week" was distributed. This pamphlet indicated the activities scheduled for each day.

Program for Monday Morning

The principals assembled at 8:45 on Monday morning to begin the formal test week. Each selected a work table which was to be his "office" for the entire test period. On his table he found a large file folder which was identified by a testing number. This number served to identify all of the work he performed during the week.

The staff member supervising the administration began the morning with a detailed formal introduction to the test week. He covered the following major points:

1. We have reproduced a realistic situation involving a hypothetical elementary school.
2. Our research objective is to achieve a comprehensive understanding of public school administration.
3. The first day and a half of the week will be used to introduce the school and to give facts that are ordinarily available to a principal working in a community.
4. From now until Friday morning each principal is to be Marion Smith, principal of Whitman School, in the Jefferson School District in Washington County of the state of Lafayette.
5. Until now, each Marion Smith is supposed to have had only the briefest introduction to his (or her) new position--a short visit to the community and a meeting with members of the Board of Education and Dr. Donnelly, the superintendent.

After this introduction the principals were shown a film strip described in more detail in Chapter IV. This film strip accompanied by a taped commentary took the new principal for a tour of the community with a well-informed guide. After the strip was shown, Examination Booklet I was distributed. It contained three questions asking for "off-the-cuff" reactions or impressions created by the film. The principals were allowed to retain their examination booklets and were instructed that at the end of the afternoon they would have an opportunity to answer the same three questions again.

This short examination after the presentation of the film strip was the first of a series of such devices used during the first day and a half. The devices were of two sorts: (1) tests which primarily served the purpose of motivating the principals to acquire as much background information as possible, and (2) guides which insured that each principal gave approximately the same amount of attention to each of the various areas of background material. These helped to achieve greater standardization in the background studied. A third purpose of these tests and guides was to provide research data for the study of values described in Chapter IX.

After the test on the film strip was completed, a copy of the Jefferson School Community Survey was distributed to each principal. The principals were permitted to study this 152-page document until 10:30, at which time Study Guide A was distributed. Study Guide A required each principal to answer certain questions about the Jefferson schools. It directed his attention to the several parts of the survey. The principals were instructed to work individually in their study, but they were free to walk about, stretch, or to help themselves to coffee. The principals were permitted to retain their copies of the survey and study guide for the balance of the week.

Program for Monday Afternoon

Monday afternoon's work started at 1:30 p.m. with the showing of a sound motion picture entitled, "You Will Enjoy Teaching in Jefferson." It was explained that this color film was prepared at the request of the Jefferson Teachers Association by an amateur photographer (and a member of the faculty of Whitman School) to acquaint prospective teachers with the school system and community. The film ran approximately 45 minutes. It took the principal inside Whitman School to see the children and staff at work. The showing of this film was followed by a five-minute period during which the principals were allowed to make notes on the film's content for their own future use.

The second activity of the afternoon was the study of sets of materials pertaining to the personnel of the school district. The materials included a roster of the chief administrative officers of the Jefferson school system and of the staff of Whitman School, the Study of the Whitman School Faculty (a sociological study presumably done by a graduate student), a file of the personnel folders on each Whitman teacher, and the floor plan of Whitman School.

At 3 p.m. Study Guide B was distributed, again for the purpose of focusing the principals' approach to the background materials under study. Examination Booklet 2 was distributed at 4.10 p.m. This contained the same three questions as to the impressions the principals had developed during their study of the materials. This completed the work for the day.

Many principals commented on their inability to cover all the material that had been presented to them, and some wished to continue their study during the evening. In order to standardize the length of time spent in study, no one was permitted to take documents from the test room or to spend his evening studying.

Program for Tuesday Morning

Tuesday morning's work started with the playing of tape recordings of three incidents that conveyed information about Whitman School. The recordings were introduced as a device for the principals to learn facts and attitudes, and it was explained that there were no implications that Marion Smith had actually overheard the people involved. After each incident was heard, the principals were given three minutes to make notes.

Following the presentation of the tape recordings, several small items were distributed to the principals for review and study. These included The Jefferson Staff Handbook, The Board Statement of Policies and By-Laws, a copy of a recent school census, a report of pupils' test scores, a class size list, a school calendar, and a regular calendar for the year 1958-59. The principals were permitted to study these materials without guidance until 10.15 a.m., at which time Study Guide C was distributed.

Tuesday morning's work was stopped at 11.25 a.m. At this time the principals were required to put all the background materials aside and to take an achievement test. This test consisted of 100 specific items sampling the content of all the background materials. The principals were required to answer from memory; they were not permitted to consult the background documents, study guides, or their notes. Scores on this achievement test were to be used in the study as a measure of the amount of background learned during the first day and a half of the test week.

Program for Tuesday Afternoon and Evening

On Tuesday afternoon Marion Smith's formal orientation had been completed and he began to perform his duties as principal of Whitman School. The afternoon was spent in carrying out three specific assignments that might normally be faced by a new principal. At 1:30 p.m. the principals were given instructions for two of these tasks: to write a 250-word autobiographical sketch for the school page of the Daily Record, the local newspaper; and to write an article for the first issue of the *Whitman School Magazine*, a student publication. It was explained that the directions for the third task would be given later.

The third task was the preparation and delivery of a ten-minute speech to the local P.T.A. on the topic, "The Value of Education in America." Rooms where the speeches were to be delivered had been set up with tape recorders. Scheduling the delivery of speeches was accomplished through instruction cards distributed at prearranged intervals. At the typical center, four rooms with recorders were available. Beginning at 2 p.m. and at intervals of 15 minutes thereafter, instruction cards were given to four principals at a time (starting at the rear of the room to avoid disturbing others who had not yet received their cards). Each card contained instructions for preparing the speech and the message that at the end of 45 minutes the principal would be escorted to a room where his speech would be recorded. The 45 minutes were to be used to prepare the speech.

Each principal was taken to the recording room and introduced to the P.T.A. by a staff member who then left the room. He returned after 10 minutes, turned off the recorder, and prepared it for its next user. After the speech was recorded, the principal resumed his writing. At 4.10 p.m. the newspaper and magazine articles written by the principals were collected and the group dismissed until 8 p.m.

In the evening the principals were asked to step out of their roles as Marion Smith and take two subtests of the National Teacher Examinations, Common Examinations. The subtests, one sampling general cultural knowledge of mathematics and science, the other social studies, literature, and fine arts, required one hour for administration.

From the point of view of the principals, Tuesday evening was the low point of the test week; they had just completed a day and a half of strenuous study of background materials. The morning achievement test had shown them that they had been unable to learn all the background information. The tasks of Tuesday afternoon, especially the preparation and delivery of a speech, were almost traumatic for some. The administration of the NTE subtests in the evening terminated a very full day.

Program for Wednesday Morning and Afternoon

On Wednesday morning the principals began the first of a series of four in-basket tests. Two packets of materials were distributed to each principal; one was marked A, the other B. The B packet contained an assortment of stationery and supplies that were to be used with each of the first three in-basket tests. Packet A contained the items of the first in-basket and a sheet of instructions. The instructions described the general setting for In-Basket A and gave specific directions on how each principal was to work on the problems it contained.

The setting for In-Basket A was Labor Day, the day preceding the first day of school. It was Marion Smith's first day on the job. A summer work commitment and the necessity of moving his family to a new community had precluded earlier attention to the many problems of the beginning of a school year. Marion Smith had managed a brief visit to his office on the preceding Friday, at which time he instructed his secretary, Ruth Platz, to get together those things that needed his attention and to leave them on his desk. The materials in Packet A were the items she had assembled. Since it was a holiday, no one else was around, the switchboard was closed, and Marion Smith had to work on the contents of his in-basket without help. He had only 2 hours and 15 minutes to work, but of course wanted to get as much done as possible.

At the end of the 2 hours and 15 minutes allotted to the principal for work on his in-basket material, he was asked to stop and complete a Reasons-for-Action form, for which 45 minutes were allowed. (This form was completed out of role.) In completing the Reasons-for-Action form, each principal indicated very briefly what he did in response to each item and why he did it. This information was needed to clarify (for later scoring) the nature of each course of action the principal had taken and the motives which prompted the action.

On Wednesday afternoon the principals worked on a second set of in-basket materials (Packet C). The setting for these items was as follows: on Monday, Tuesday, and Wednesday, December 1, 2, and 3, Marion Smith attended the Lafayette State Elementary Principals

Association Convention and had, therefore, not been in his office since the preceding Friday. The contents of Packet C had accumulated on his desk. His secretary, ill with a severe cold, was out of the office when he returned. Marion Smith's work was again limited to 2 hours and 15 minutes because of a scheduled conference with the superintendent which was to take the remainder of the day. At the end of the allotted time the principals were given 45 minutes to fill out the Reasons-for-Action form.

The morale of the principals was relatively high at the end of the day. The in-basket items were subjects for lively informal discussions. Many principals observed that problems presented in the in-basket test were very similar to real problems they had handled in their home schools. There was a general feeling that the test materials were relevant to their work as school administrators and provided an opportunity for them to show their skills.

Program for Thursday Morning

The principals continued to work on in-basket problems on Thursday morning. In-Basket D was set in February. Marion Smith had been unable to get to his desk for several days because of a very heavy schedule of conferences and appointments. He had a new secretary and could not rely upon her for much help. In-Basket D had some items of an emergency nature which were presented by the use of short tape recordings. There was also a mail delivery in mid-morning. Again, time was limited to 2 hours and 15 minutes, with an additional 45 minutes reserved for the Reasons-for-Action form.

Program for Thursday Afternoon

Thursday afternoon brought a change of pace with two entirely different sets of tasks. The first set of tasks,which was recorded on tape,presented a series of five educational problems, each within a setting of a conference or discussion, as described in Chapter IV. At the end of each recording, Marion Smith was allowed six minutes to give his answers to each of four questions relating to that problem using a special booklet prepared for the purpose. At the end of five minutes he was given a one-minute warning, and at the end of six minutes the next problem was introduced.

The second set of special educational problems consisted of three 15-minute kinescopes showing teachers working with their classes. Each of the three teachers was on probationary status at Whitman School. Marion Smith visited their respective rooms by way of the kinescopes. Immediately after viewing each teacher's performance, each principal was allowed 15 minutes to complete a probationary teacher report form and to outline an interview he planned to have with the teacher.

Program for Thursday Evening

Thursday evening was devoted to still another type of special problem. Each principal was assigned to a group usually of five members, and as a member of the group took part in face-to-face discussion of a problem. Each group made up a special committee appointed by the superintendent to advise him on the selection of a new principal for Whitman School. It was mentioned that Marion Smith had done an excellent job during the past year and had accepted a position of higher responsibility in the system; a new principal for Whitman School therefore had to be selected. The committee was provided with credentials on the three top candidates and was given an opportunity to study them. The chairman of the committee was a staff member who assumed the role of the assistant superintendent for business who was pinch-hitting for the superintendent. In this role the staff member remained out of the discussion by professing lack of knowledge of the problems, and he assumed for himself the task of taking notes on the meeting. Actually the staff member occupied himself as an observer; a second staff member, who sat apart from the group also served as observer. The discussion of the candidates was allowed to continue for 30 minutes or until a decision was reached.

Program for Friday

The principals completed their work as Marion Smith on Thursday evening. Their task for Friday morning was to work on a fourth in-basket test which was set in a business situation. This test was introduced into the program for the week to secure data from a different type of situation and thus to broaden the range of problems faced by the principals. There was also interest in making comparisons of behavior in the two types of situation. The Bureau of Business In-Basket Test was administered with the usual 2-hours-and-15-minutes time limit. Forty-five minutes were added for the Reasons-for-Action report.

Friday afternoon was used for a critique and general discussion with the principals about their week's work. The time required was usually short enough to permit the principals to leave the center by mid-afternoon.

The final part of the program for the week was accomplished by members of the research staff. Each independently completed a sociometric nomination form, listing the top five and bottom five principals on each of the following three criteria:

1. If you were requested to select a principal for Whitman School on the basis of what you now know about each one, whom would you choose?
2. Who among the principals was most popular with the others and seemed to get along best socially?
3. Who among the principals did you like best?

Arrangements for the Test Week

The test week just described was conducted 12 times in 11 centers located in various parts of the United States. With 20 or so participants involved in each center, living at a location away from home, and with a good deal of complex material to be assembled at each center, including projectors, screens, and tape recorders as well as a great variety of printed materials, it is obvious that even from a logistics point of view a lot of planning was needed for the successful conduct of the project. This section will deal with the planning and preparation for the collection of data at the test centers.

Choosing the Schools

Since many of the important parameters of the population of elementary school principals are unknown, there was little basis for a systematic selection of a well defined sample. It was decided to choose school districts primarily on the basis of these criteria--geographic location, size of school district, and type of school district. No attempt was made to obtain a sample of principals which was representative of the population of elementary school principals in the United States; but it was hoped that the criteria used would produce a sample which was almost as varied as the population.

A list of suitable districts was developed, and the project was discussed by telephone with the superintendent of schools in each district. Tentative commitments to participate in the study were made in a high proportion of calls. A detailed description of the proposed study was mailed to each superintendent, and in many cases he was visited by a staff member who answered questions, talked to principals, negotiated a financial arrangement for sharing expenses, and made other necessary local arrangements.

Thirty-two different school systems participated in the study; they each provided from one to 45 principals who served as subjects. The school systems are shown in Table II-1, along with test center locations, testing dates, and the number of principals from each school system.

Choosing the Principals

No principal was required by his superintendent to participate in the study; all principals who took part did so voluntarily. It was necessary, of course, to inform the principals in advance about the study, the nature of the tasks required of them, and the confidential nature of all information obtained. A meeting of the principals, a member of the school administration, and a staff member was usually held for the purpose of providing such information. The proportion of principals who were willing to participate varied from one school system to another, but was usually high.

The research staff wanted a wide diversity among the principals studied. In some smaller districts, all the principals were asked to participate. In large school systems, the school officials were asked to select approximately equal numbers of principals considered to be among the most able and the least able. It was hoped that by choosing school systems and principals within school systems which were diverse, the sample of principals would be varied enough to reveal clearly the interrelationships of the measures employed in the study.

Local Administrative Arrangements

A liaison officer was appointed to serve as local coordinator for each of the test centers; he was usually the supervisor of elementary education for the participating district most involved in the particular center. The liaison officers were particularly helpful in communicating with the principals, obtaining data from the superintendent's office, and making arrangements for the test center.

The Test Center

The schedule established for the test week was a very full one, including evening as well as day-time activities. The investment of time and effort in the study by the principals made it highly desirable that no cases be lost because of incomplete data. These considerations led to the decision to conduct the test weeks at locations where the principals would be free from interruptions and where they could live together. With the help of the liaison officers, a location was found for each test week which was within easy traveling distance for the principals but which was far enough away to discourage communication with the home school. Sometimes the center was located in an off-season resort hotel, sometimes in the

TABLE II-1. LOCATIONS AND DATES OF TEST CENTERS; WITH SCHOOL DISTRICTS AND NUMBERS OF PRINCIPALS PARTICIPATING

Test Center Location	Date	School Systems Represented	No. of Principals
Hilltop House, Harpers Ferry, W.Va.	May 19-23, 1958	Baltimore, Md.	23
Hilltop House, Harpers Ferry, W.Va.	May 26-30, 1958	Baltimore, Md.	22
Punderson State Park, Ohio	June 23-27, 1958	Willoughby, Ohio	10
Student Union, Oklahoma State University, Stillwater, Okla.	Oct. 13-17, 1958	Oklahoma City, Okla.	20
New Ocean House, Swampscott, Mass.	Oct. 27-31, 1958	Lynn, Mass.	3
		Gloucester, Mass.	2
		Concord, Mass.	2
		New Britain, Conn.	2
		Bennington, Vt.	2
		Warwick, R.I.	2
		E. Providence, R.I.	2
		Manchester, N.H.	2
		Concord, N.H.	2
		Portland, Me.	2
Lake Wilderness Lodge, Maple Valley, Wash.	Nov. 3-7, 1958	Tacoma, Wash.	20
Mayfair Hotel Colorado Springs, Colo.	Nov. 10-14, 1958	Denver, Colo.	20
Lake St. Mary, Michigan Education Association Camp, Battle Creek, Mich.	Nov. 17-21, 1958	Lansing, Mich.	8
		Ann Arbor, Mich.	6
		Jackson, Mich.	6
Sonoma Mission Inn, Boyes Spring, Calif.	Jan. 19-23, 1959	San Rafael, Calif.	5
		Berkeley, Calif.	5
		Modesto, Calif.	5
		Mt. Diablo, Calif.	5

TABLE II-1 (Cont'd)

Test Center Location	Date	School Systems Represented	No. of Principals
Florida A. & M. University, Tallahassee, Fla.	April 6-10, 1959	Orange County, Fla.	4
		Hillsborough County, Fla.	5
		Pinellas County, Fla.	5
		Leon County, Fla.	5
Colonial Inn, St. Petersburg, Fla.	April 13-17, 1959	Hillsborough County, Fla.	20
American Hotel, Freehold, N.J.	April 27-May 1, 1959	Allentown, Pa.	10
		Greece, N.Y.	2
		Smithtown, N.Y.	2
		Bronxville, N.Y.	1
		Tarrytown, N.Y.	1
		Uniondale, N.Y.	1

student union building of a university. The location of each center is shown in Table II-1 and on the map (Figure II-1).

A list of criteria for choosing the site was drawn up by the staff to help the liaison officer in choosing the center location. Facilities for housing and feeding participants and staff members were of course necessary. Criteria also included availability of adequate desk space for the principals, adequate ventilation and lighting of the work room, feasibility of darkening the room for viewing films and kinescopes, adequate acoustic properties, and availability of space for the committee meetings and speech recording sessions and for storage of materials.

Collection of Other Data

One important objective of the study was to investigate the relationships of measures of administrative behavior (obtained from the tasks of the test week) to personal characteristics of elementary school principals. These characteristics are reflected by biographical data, scores on a variety of measures of ability, interest, and personality, and judgments of superiors and subordinates. For the most part this information was obtained prior to the test week.

One to two weeks before the test week, the principals who were to attend each center met with a member of the research staff. At this preliminary meeting the project was again discussed with the principals and they were given an opportunity to ask questions about the project and their role in it. It was on this occasion that a packet of test materials was given to each principal, a packet containing inventories which the principal was to fill out at home and

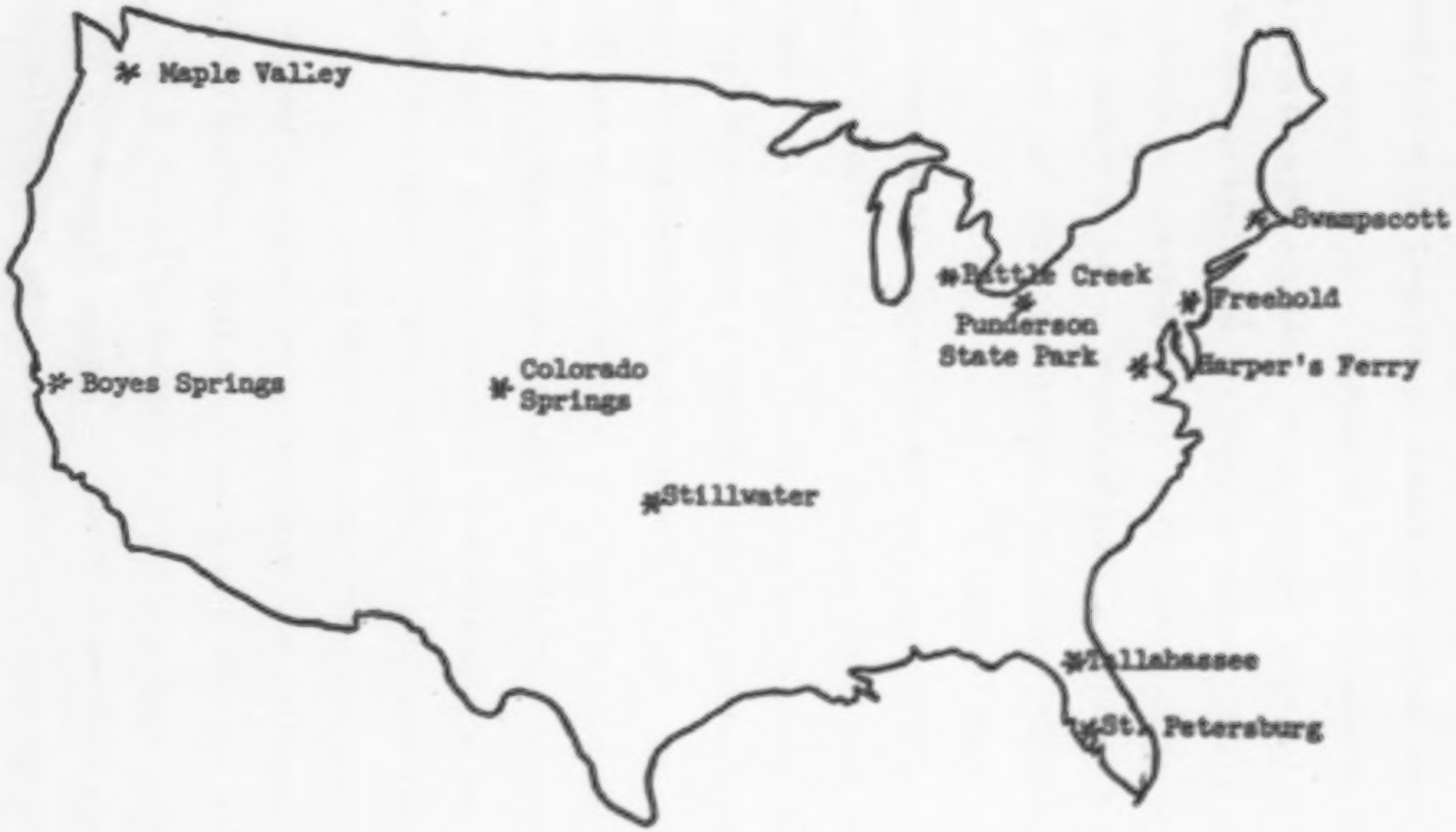
Maple Valley
Boyes Springs
Colorado Springs
Stillwater
Battle Creek
Punderson State Park
Swampscott
Freehold
Harper's Ferry
Tallahassee
St. Petersburg

Figure II-1. Approximate Location of Test Centers

mail to the research staff. The packet contained a biographical inventory, the 16 Personality Factor Inventory, The Strong Vocational Interest Blank (Male), the Symonds Educational Interest Inventory, and a test of administrative attitudes.

On the following day, which was usually a Saturday, the group met for an all-day session at which the supervised portion of the battery was administered. This battery included the School Administration and Supervision test, Education in the Elementary School, and a battery of 13 tests of cognitive abilities selected to measure certain aptitude factors.

The liaison officer made the preliminary arrangements for the testing as described above, and, in addition, collected other items of information about the principals. He arranged for a meeting of the teachers serving in each principal's school and at this meeting distributed two forms: the Teacher Reaction Form and the Principal Behavior Description Questionnaire (described in Chapter XI). The liaison officer also obtained from the superintendent's office a standard set of objective data which was compiled as the principal's Professional Experience Record; this form included such items as years of experience, sex, age, and education.

The remaining task performed by the liaison officer was to obtain from the superiors of each principal a completed Superiors Rating Form, which provided a subjective evaluation of the principal's performance in his own school. From two to four superiors filled out the form for each principal. The form provided an opportunity for the superior to make evaluations of work in specific areas as well as a general over-all evaluation.

Summary

In this chapter a brief description has been given of the test week which was created to provide for the administration of standard tasks occurring within a simulated elementary school. Two hundred and thirty-two principals were selected from 32 school districts located in widely separated sections of the United States. These principals were tested in groups of approximately 20 principals, each at convenient test centers. The participating school districts also provided information about each principal's performance in his home school. This information included ratings of each principal's performance by his teachers, as well as superiors.

The general description of the way in which the data of the study were collected will be amplified in the two chapters immediately following. Chapter III is written to give a detailed and qualitative description of Whitman School. This is the simulated school of which each of the 232 subjects of the study was asked to serve for a week as its principal. Since differences in school situations are known to be large, it is important that the reader know about the specific school situation which was used in the study. Chapter IV is an account of the procedures that were used to build or construct the simulated school.

CHAPTER III

WHITMAN SCHOOL

If you had been one of the 232 principals who were the participants in the study, you would have overheard (by means of a tape-recording) the following conversation between the full-time librarian at Whitman School, Patricia Lee, and one of the fourth-grade teachers, Eleanor Blake. They had just come into the teachers' room and were talking about the news that Mr. Jarrett, the principal, was leaving. Their conversation reflects some of the problems that would have to be faced by Marion Smith, the new principal of Whitman School.

Pat: "Well, hi, Eleanor. You got down here before I did."

Eleanor: "Yes, what do you think about Mr. Jarrett's leaving?"

Pat: "I was so surprised that I didn't know what to do."

Eleanor: "It'll be the second principal I've broken into this school. You know I was here before he came."

Pat: "Oh, that's right. You've been here--oh, dear. Well, I surely do hate to see him leave."

Eleanor: "Well, I don't know. I hope we get a principal this time that'll back up the teachers and not let the parents run the school."

Pat: "Oh, I think Mr. Jarrett has been very helpful. He has really helped me out."

Eleanor: "Oh, he may be helpful, but the parents are running the school. Do you remember at Hallowe'en--well, I guess it was two weeks before--when they brought in that UNICEF film?"

Pat: "Well, I vaguely remember it."

Eleanor: "It probably didn't mix up your schedule like it did, mine. On Monday morning that mother was there with the film. No advance warning. And it had to go back at noon. So what do we do? We change our schedules."

Pat: "Well, he gets things like that every now and then. He's worked through a lot of things with me. You know, I have parents helping me in the library a half-day every day. They catalog and do clerical work and check books in and out and things like that for me, and it leaves me time to really work with the children."

Eleanor: "It's fine, if it relieves the teachers, but sometimes it puts on extra pressures. I certainly don't like to have parents just popping in and disrupting a schedule at the drop of a hat."

Pat: "Yeah, but he doesn't disrupt my schedule too much, I guess. But, you know, he's so good about just providing time for you to come in and sit down and talk over problems. I feel like I can just walk in to him any time I have a real problem and he'll take time and listen to it and help me think through what I'm trying to really do."

Eleanor: "Well, I know he's always there to talk to and maybe it's the therapy that does you good because nothing happens afterwards."

This chapter will attempt to provide the background for this conversation and for the problems implied in it. Its purpose is to acquaint the reader with Whitman School, the school in which each of the 232 subjects served as principal for five days.

Whitman School, along with the Jefferson community of which it is a part, constituted the setting for the week's work of 232 Marion Smiths. To this setting they each brought their unique personalities and capabilities, their individual past experiences, and expectations. But it was the Jefferson community and, more particularly, the Whitman School that constituted the common base for them all. Here they were all confronted with the same problems and were all provided with identical resources for coping with these problems. And it was within this setting that they all displayed the administrative performance that this study attempts to understand. In this sense, then, the "Whitman community" may be viewed as the backbone of the study.

In order that the reader may better understand both the procedures and results of the study, this chapter presents a brief description of the Whitman setting -- in fact, much the same view that each Marion Smith was given in his early orientation. It starts with a general overview of suburban Jefferson, then moves on to a description of the Jefferson school system, and its educational policies. The chapter next describes Whitman School itself, introducing the school's "vital statistics," and comparing Whitman with the other Jefferson schools. Finally, the chapter focuses upon the Whitman faculty, the people with whom Marion Smith will interact most frequently. This chapter provides a survey of the fictional community and school that constituted the home and workplace of the 232 principals. To them, Whitman was a real school for a week, and Jefferson a real community. The next few pages are devoted to answering the question: What kind of a community is Jefferson?

The Jefferson Community

Whitman School is one of four elementary schools of the Jefferson Township School District, in the state of Lafayette. The general atmosphere of Jefferson, like that of many other suburban areas, is one of pleasant well-being. The streets are neat and well-kept, the homes comfortable and in good repair. No apparent slum areas exist. Many of the community's residents commute 20 miles to work in nearby Lake City. Many other residents earn their living locally as businessmen, as professionals, as small industrialists, and as laborers.

Like most communities of its kind, Jefferson is highly organized. In addition to school-community groups, religious groups, and garden clubs, there are the usual number of lodges, service clubs, business and professional groups, and women's clubs. Jefferson's location near a large body of water affords many residents opportunities for boating. Country clubs provide further means for leisure-time activities.

The standard of living of the residents of Jefferson is relatively high. Although there are a number of commuter families whose incomes fall within the $5000-$8000 range, most of the commuters in the professional and management groups earn from $15,000 to $50,000 a year. Professionals who work locally enjoy incomes larger than most people in the same professions elsewhere; and local merchants, along with their employees, receive better-than-average returns.

The educational level of the community is similarly high. Well over half of the population has been to college, and in recent years about three-quarters of the high school graduates have continued their education.

Politically, the community is at least 70 percent Republican, the Republicans traditionally winning most local elections. The residents seem generally well-satisfied with their government.

Somewhat atypical is the composition of Jefferson's population in terms of national origins and religious groupings. Almost 10 percent of its 28,000 are foreign born, about half of these having come from Italy. Among the native born, about 20 percent are second-to-fifth-generation Italians. The largest religious group in the community is Roman Catholic. Protestants come next in order and are followed in number by Jews, who comprise about 15 percent of the population. Five residents in every hundred are Negro.

Also somewhat atypical is the governmental set-up of Jefferson. Although the district forms a single community educationally, three local governmental areas--Jefferson Village, Cedar Park Village, and an unincorporated area--exist within this school district, each providing its own fire, police, and recreational services. Despite good cooperation, this overlap in municipal administrative functions remains a source of potential conflict.

Another source of potential conflict inheres in the differences among these areas. Jefferson Village, settled earlier than Cedar Park, has always been the most closely-knit village. Its residents, mostly middle-class workmen, have had a small-town orientation and a lower standard of living than have their more affluent neighbors. Almost all the Negroes and foreign-born residents of the Township live in Jefferson. Cedar Park, on the other hand, began as the home of wealthy people who left the crowded metropolis for the quiet woodlands and attractive lake front of Cedar Park in the late nineteenth century. Many of its old, lavishly-conceived homes still stand. Cedar Park became the mecca for sailing enthusiasts, many of its beaches having been bought up by private clubs.

The differences between these areas, while having an effect on the school system, are nonetheless ameliorated by the very existence of that school system. Jefferson Township places great emphasis upon education. The school system thus serves as a unifying force to tie together the disparate elements within the community.

In 1957, Jefferson's yearly expenditure for public schools was about $600 per pupil as compared with the national average of $244 per pupil. The schools' equipment is plentiful and up-to-date; money for new additions to the buildings is voted with comparatively little difficulty. The relatively high salaries paid by Jefferson (the starting salary for an inexperienced teacher with a B.A. is $4,300) plus the good reputation enjoyed by the school system results in Jefferson having little difficulty in attracting and retaining good teachers.

Jefferson's location near a large city makes available to its students other resources. Lake City has several museums accessible to the children; another nearby city has recently initiated a museum workshop for school-age children.

Perhaps of most importance in affecting the schools is the community's great interest in education and its unusually close relationship with the schools. The Daily Record, Jefferson's local newspaper, carries a considerable amount of school news and on occasion devotes whole pages to school affairs. Most mothers in the community are free from the necessity of working and can therefore spend a lot of time on the schools. All of Jefferson's schools have very active P.T.A. groups. Parents are also quite active on the four elementary school Health Councils. Several of the mothers volunteer their services and work within the schools themselves. Whitman School, for example, has the services of qualified mothers to teach elementary French in the lower grades. Other volunteers do clerical work in the library, which permits the librarian to work closely with the children.

The people of Jefferson, well-educated themselves, strongly support the school system. The pressure they exert for their children to attend college tends to keep up the standard of Jefferson's schools. From their great interest, however, stems the problem of parental interference. Another problem created by this "college-oriented" community is that of properly educating those children who will not enter college. Its children come from "both sides of the track" and the needs of the one group do not always coincide with those of the other.

The Jefferson Township School System

To operate its schools, the Jefferson school system employs a professional staff of 260, including classroom teachers, special teachers, librarians, nurse-teachers, supervisors, principals, and central office administration. The administrative staff consists of 11 persons, nine men and two women. Most of these served some kind of "apprenticeship" in the system before being appointed to an administrative position.

Perhaps the most outstanding aspect of the administration is the person of E. Andrew Donnelly, the Superintendent of Schools. No mere figurehead, he is powerful in both the schools and community. He has been in Jefferson for almost 20 years and has taken a leading role in many of the developments that have given the schools their present status. He has willingly consented to surveys of the schools by outside agencies, not only because of a sense of pride in the system, but also because of a desire to improve through adoption of recommendations that might be made.

The Assistant Superintendent for Instructional Services is responsible for the instructional program. The creation of this post in 1954 has been a strong factor in speeding up the process of curriculum development. Mrs. Seward, the woman appointed, has been teacher and principal in the school system for 16 years. She is one of the prime forces behind the continuing curriculum development within the school system. One principal has described her appointment as the most important change in the school system in many years.

Other administrative officers include the Assistant Superintendent for Business Management and the six building principals. In addition, each of the two secondary schools has an Assistant Principal and a Counselor, who is responsible for the guidance services of the school.

The administrative officers are appointed annually by the Board of Education of the Jefferson Township School District. The Board is made up of six members, two being elected each year for a three-year term. By informal local agreement, two members of the Board are chosen from each of the three areas of the district. Also by local agreement, no member serves more than two terms. This practice limits the possibility that an individual, through long continuance in office, might establish a vested interest.

Candidates for the Board must be supported by a petition of not less than 25 qualified voters. In recent years, all candidates have been hand-picked by a self-perpetuating committee of lay citizens. This Committee for the Selection of School Board Nominees is made up of 24 residents of the school district, eight from each of the three major sections of the community. Members of this group review the qualifications of all proposed candidates and present their slate at an annual meeting. The candidates they present are almost always elected. This entire nomination procedure is informal and unofficial. The absence of any opposition and the obvious quality of the present

Board members both seem to reflect community satisfaction with the working of the committee.

During the school year, the Board meets twice each month. The first hour of each meeting is closed, attended only by Board members, some members of the schools' professional staff, and the local reporter. Thereafter, many other members of the community, particularly P.T.A. members, sit in on the meeting. Between meetings, there are many informal contacts between the superintendent and the Board.

On the morning following the first of the two monthly meetings of the Board, the "monthly principals' meeting," as it is called, is held in the office of the superintendent. Attended by the system's chief administrators and the six building principals, the meeting affords the superintendent an opportunity to refer certain matters to the group for their reactions and to review the Board meeting of the preceding evening. Most items in the principals' meeting are raised by the superintendent, and the discussion is led by him. The principals usually have little opportunity to talk.

About two weeks after the monthly principals' meeting, the four elementary school principals usually meet alone with the Assistant Superintendent for Instructional Services to discuss matters pertaining to the elementary schools. In October of each year, the six school principals meet with the Board of Education to discuss the needs of their respective levels in the educational program.

The Jefferson Township Teachers Association is the main vehicle through which the staff exercises its influence on the school policy. This group cooperates with the Parent-Teacher Associations and the Board of Education in sponsoring an annual Community Institute for the discussion of current issues. In recent years, the Association received a rejuvenation when the teachers' salary crisis of the late forties gave the local teachers an issue around which to rally. The Association became their agent in negotiating salary increases with the Board of Education. Salary issues and related matters have continued to be among the prime concerns of the Teachers Association.

In an organized fashion, the public shares in educational planning and policy-making through three structures: the Committee for the Selection of School Board Nominees, the Parent-Teacher Associations of the six schools, and various ad hoc advisory committees. More informally, individual laymen may be invited from time to time to share in policy-making, either as experts or as ordinary citizens. As in most communities, citizens may--and do--express their opinions on school matters without invitation.

The activities of the Committee for the Selection of School Board Nominees have been mentioned earlier. Although this committee represents one of the most important ways by which the people of Jefferson have an opportunity to influence school policy, it is through the six Parent-Teacher Associations that the general public is most closely related to educational planning and policy-making. Compared with an average American school situation, the Jefferson P.T.A.'s are unusually active organizations and their scope unusually wide. It was largely through the activities of the P.T.A.'s for example, that the school libraries were set up and staffed, and it was through their efforts that French is being taught in the elementary schools. Leadership positions in these groups carry high status in the community. Both formally and informally they have considerable impact upon the schools. Indeed, how much impact on the schools the P.T.A.'s should have is one of the prime issues of the school system.

The third way in which laymen become actively involved in planning for the Jefferson schools is through lay advisory committees. There is no general, continuing lay advisory committee such as is found in some communities; but specific, temporary lay advisory committees are used from time to time. It was such a committee, for example, that was instrumental in developing the plans for the alterations and additions to the junior high school building. That laymen have a valuable contribution to make to the program and operation of the schools is a proposition that goes unquestioned at Jefferson.

Educational Policies and Procedures

The remainder of this chapter will deal with some general system-wide school characteristics and will then move on to a more specific consideration of the Whitman School.

In general, one might say that Jefferson does not tend to pioneer in its curriculum, but instead follows national curricular trends promptly as they become apparent. Although there are a number of staff committees at work on curriculum development, there is little evidence of the "broken front" approach to curriculum improvement which encourages an individual teacher to experiment freely on his own initiative. Indeed, the impression gained is that more value is placed upon conformity than upon experimentation by staff members.

With respect to whether the school system is centralized or decentralized, there seems to be a mixture of tendencies. The manner in which the principals' meeting is planned and conducted, for example, can be viewed as a mark of centralization, since the Superintendent of Schools dominates this meeting. Centralization is similarly apparent in the dearth of intra-school committees in contrast with the numerous inter-school staff committees. The large number of system-wide rules that are given in the Staff Handbook suggests the value placed upon centralization. Further, all the elementary schools use the same report card.

The method used for selecting new staff members, on the other hand, is much more decentralized than in many school systems. The building principals in Jefferson apparently make the key decisions with respect to recommending new staff for employment. Likewise, in making recommendations concerning the tenure of staff members, the building principals usually make the key decisions. In other matters, too, the superintendent often delegates authority and responsibility. On the issue of centralization vs. decentralization, the Jefferson system follows no consistent practice.

One practice rigidly insisted upon by the Jefferson administrative staff, however, is that of the self-contained classroom. The classroom teachers are expected to be with their pupils at all times except for physical education periods. Jefferson makes wide use of consultants. Each elementary school has a librarian, a nurse, and consultants in art, reading, and home economics; and each elementary school has part time the services of a psychologist, consultants in arts and crafts, and in vocal and instrumental music. The consultants very seldom work alone with the children. The classroom teachers are expected to take an active part in all the directed educational experiences of the children, the consultants functioning only as resource persons and only helping with activities where their specialized training is desired. Some of the older teachers are resentful of this arrangement and are openly outspoken in their denunciation of the consultant arrangement and the self-contained classroom, which they view as an imposition upon their freedom. This issue is another problem for the school.

The curriculum of the Jefferson schools is constantly being evaluated, revised, and coordinated. P.T.A. groups are actively engaged with groups of teachers in this process. Teacher committees are usually composed of teachers from several grades, so that there can be coordination of the child's learning as he progresses through school. Within the past few years, curriculum guides for elementary school teachers have been formulated by committees of elementary school teachers working with curriculum specialists. These guides are now available in arithmetic, citizenship education, language arts, science, and art. Guides are being prepared in physical education, homemaking and crafts, music, speech, and library. Each guide lists grade placement of content and includes suggested problems, activities, and projects as well as suggestions for correlating with other subject areas.

The handicapped children of Jefferson are provided for in various ways. If they are confined to their homes, the system provides for home instruction. If they are able to attend school but require special training, they are sent to special schools in nearby districts at public expense. A special class is conducted at Whitman School for a group of children with IQ's from 50-75.

Similarly, Jefferson makes provisions for the gifted child. These include such things as the guidance of gifted pupils in selecting advanced reading materials, the encouragement of art and music teachers to make special efforts to encourage gifted children in those fields, the formulation of special honors sections in mathematics and English in the high school, the offering of an in-service course on the gifted child, and the establishment of a faculty committee to work on improving education in this area.

The school district is fiscally independent of the municipal government. The Board of Education prepares its own budget and levies the school tax. In December of each year staff members are asked for assistance in developing the budget for the coming school year. Teachers request items of supplies and instructional apparatus they will need for the coming year; the principals screen these requests and compile them for their school buildings. The list for each building and service department is sent to the central office, where the requests are reviewed by the superintendent and his staff. The superintendent's total budget is presented to the Board by March 1. The Board holds a hearing on the budget in May. Invitations to the hearing are issued to many community groups and the public is invited to attend. Although attendance is not large, some of those present are representatives of their organizations, so that many more people are represented than are present.

During the hearing, each member of the Board takes a section of the preliminary budget to explain to the people present. After the hearing the Board may leave the budget unchanged, or it may revise the figures downward or upward. After any such change, the Board formally approves the final budget, which then becomes the basis for the next year's school tax rate.

The Whitman School

The Whitman School building was constructed in the early nineteen hundreds and has had a few additions since then. The three-story structure consists essentially of two buildings with connecting corridors. In addition to classrooms, it has a library, a music room, an art room, an industrial arts room, a kitchen, a teachers' room, a clinic, and a large gym-auditorium. The school office is located in the center of the building. The entire building is neat and well-kept, and its equipment is up-to-date and plentiful.

Although the school building itself is adequate, many feel that the space surrounding the school is not adequate. The playground area is somewhat cramped and the school's facilities for parking are not sufficient. Whitman's location on a busy street creates an ever-present safety problem.

In most ways, Whitman does not differ substantially from the other three elementary schools in the Jefferson school system. All four schools are governed by the same policies and follow the same curriculum guides. And all four range from kindergarten through sixth grade. Whitman, however, has fewer classes than any of the other three schools (21 regular classes, as compared with the 25, 26, and 29 classes of Longfellow, Emerson, and Mark Twain, respectively.) The mean number of students per class is also somewhat lower at Whitman.

Despite the smaller classes, Whitman students do not achieve as well as do other students in the system. The Stanford Grade Placement achievement tests in reading, arithmetic, and spelling indicate that although the median scores of Whitman students were somewhat higher than the national median, they were lower than those of the students at the three other Jefferson schools.

More of Whitman's pupils come from families of foreign extraction and from families with lower educational backgrounds than do the pupils of the other schools, and its pupils typically have had less pre-kindergarten school experience. For all these reasons, Whitman is considered the least favored of Jefferson's elementary schools. Although this problem of Whitman being the "black sheep" of the school system has not become serious thus far, the potential danger is a matter of concern to the community's educators.

The Whitman Faculty

The faculty of the Whitman School is certainly as able and well-qualified as that of the other Jefferson schools. The faculty comprises 19 regular classroom teachers. Included are three in each grade (one through six) and one kindergarten teacher. There is, in addition, a teacher for the special class of retarded children. The faculty also includes two physical education teachers, a librarian, a nurse, a consultant in reading, one in art, and one in home economics. As mentioned earlier, the services of other consultants are shared by Whitman and the other elementary schools in the district. The principal, the school secretary, and three custodians complete the regular school staff.

The principal is the official head of the school building.

Beneath him, in formal organizational terms, is a grade chairman for each of the six grades. This office rotates annually among the three teachers in each grade.

The faculty members range in age from recent college graduates to those near retirement. Roughly half are less than 40 years of age. All but one of the regular classroom teachers are women; three of the four male full-time teachers serve as consultants.

The educational level of the Whitman staff is unusually high. Every teacher possesses at least a bachelor's degree and about half of the staff has earned a master's degree or more. Many are continuing to take courses in nearby Lake City.

The staff has a considerable range in teaching experience. About one-third of the faculty has had teaching experience elsewhere within the Jefferson school system. A dozen or so have taught outside the system, their teaching experience having been largely limited to areas in or near Lafayette. One teacher at Whitman has been teaching there since 1928. Several others arrived in the thirties or forties. About half of the staff, on the other hand, started teaching at Whitman during the past decade, and a few of these have not yet attained tenure.

The wide range in background, experience, and age of the staff members has its effect on their interaction with each other. There are very few all-faculty social get-togethers within the building faculty, such as faculty picnics or Christmas parties. Teachers of the same sex and approximate age generally make up the informal social groupings on the faculty. Religious affiliation, marital status, and propinquity of classrooms are other variables that influence group membership. Three distinct patterns of schedule are present in

Whitman School. The most rigid schedule is that of the two physical education teachers. They arrive at school at nine a.m. The physical education program begins at nine and continues until just before lunch. During the lunch hour, the teachers are on duty supervising the children. The physical education teachers do not eat at the same time as the other teachers, but eat after the afternoon session has begun. The lunch-hour duties and after-school activities contribute to keeping these two teachers apart from the rest of the faculty.

The regular classroom teachers are not as "tied down" by their schedules as the physical education instructors; but the fact that they must remain with their classes virtually all the time severely limits the amount of interaction they can have with each other during school hours.

The most flexible schedule is that of the consultants. During the course of a school day, a consultant may visit many different classes. When not working with the children, he may have an informal conference with a teacher. The consultant is almost never solely responsible for a group of children; when he is working with pupils, their regular classroom teacher is on hand and is responsible for them. His schedule is more flexible in consequence of his generally more varied program. The consultant interacts with a much larger number of teachers each day than does the regular classroom teacher. The consultants' interaction in the work situation with teachers is greater than teachers' interaction with one another.

Informal Interactions among Whitman Faculty Members

Since most of the Whitman faculty members are classroom teachers, not much opportunity exists for informal interaction during the school day. Nonetheless, there is evident, especially in the "lunch" and "coffee" periods, the development of relatively distinct subgroups, each of which is tied together by such things as age, marital status, and propinquity of classrooms, as mentioned earlier, but particularly by teacher sentiments toward the following three major school issues:

1. The performance of the former principal
2. The consultant arrangement and the self-contained classroom.
3. Parental interaction with the school.

The chief division in the Whitman School is one between what might be called the "Old Guard" and the "New Guard." The core of the Old Guard is six women classroom teachers ranging in age from about fifty to their mid-sixties. All six have taught in the Jefferson system for many years, and each has been at Whitman for at least 15 years.

The Old Guard are consistent in their views about the above issues. In general, they are not opposed to the principal, Mr. Jarrett, but feel that he is "tied hand and foot" by what they consider to be the excessive power of the superintendent. They are rather vehement in their denunciation of the consultant arrangement and the self-contained classroom, where they feel they are expected to play "Mommy" all day. This group also feels resentment toward parental interferences. They express the view that parents "run the school." As one of them commented, "You can expect a parent to pop in the room at any time."

The New Guard tends to have somewhat opposite views. In general, the younger members of the group support the principal; they feel that he backs up his teachers and is generally very helpful, although older members of the group tend to disagree. On the issue of parent interference, the teachers of the New Guard are split. Some view it as an imposition and as interfering with their work, while others feel that the parents are of great help to them. The younger members of the New Guard are enthusiastic about the consultant arrangement and the self-contained classroom; the sentiments of the older members in this regard are similar, although they have some reservations.

One might conclude that the New Guard, with a few exceptions, generally supports the status quo. The Old Guard, remembering the teaching situation as it was in their earlier days, tends to be resentful of many of the relatively recent developments at Whitman.

This chapter has presented a picture of the Jefferson Community, the Jefferson School District, and the Whitman School. The next chapter contains a description of how the simulated situation and the tests of administrative performance were constructed.

CHAPTER IV

HOW WHITMAN SCHOOL WAS CONSTRUCTED

The Whitman Elementary School of the Jefferson School District in the State of Lafayette constitutes the simulated locale for the study. Whitman School, as the description in Chapter III demonstrates, has a very definite character. Its ancestry is somewhat paradoxical, for it is both partly real and partly fictional. This chapter describes how Whitman School and its problems came into existence.

Selection of the Background School

The invention of a mythical school, with all its complexity of detail and with the necessity for consistency among these details, is obviously not a simple undertaking. It was therefore decided to use the procedure of adapting a description of a real school and community to the purposes of the study. The first step in developing the simulated school was to set up criteria to guide the search for an actual school which could be used as the prototype of Whitman School. The following criteria were established:

1. The school should provide a possibility for presenting a wide range of typical problems. At a more detailed level:
    a. The school should be located within a system having more than one school building.
    b. The community should contain families from a variety of socio-economic backgrounds.
    c. The school system should participate fully in state and federal programs.
    d. The community should be one which is growing in population with a school building program in progress.
    e. The population of the community should be heterogeneous with respect to religions.

f. Many members of the community should participate actively in educational issues.

g. The community should be a relatively autonomous unit, i.e., not a suburb of a large city.

h. The community should be urban rather than rural.

i. The population should be in excess of 20,000.

j. The school system itself should be at least a semi-autonomous unit.

k. The school should be so located as to include problems of pupil transportation.

l. The organization of the school system should be relatively "flat," with few levels of authority structure.

m. The school should be only a reasonably good school.

2. Convenience should be considered, i.e.:

   a. The system should be readily accessible to the research staff at both Educational Testing Service in Princeton New Jersey, and at Teachers College, Columbia University, New York City.

   b. The community should be relatively easy to disguise, with no extremely distinctive features.

   c. The school system should be one which had been surveyed within the last few years, in order to avoid the necessity of repeating this work.

3. Research staff members should have full freedom to observe and ask questions, i.e.:

   a. The Board of Education, chief school administrative officer, and school staff should be willing to participate in the study and to cooperate with the research staff.

   b. There should be no focal community conflicts.

   c. Members of the school staff should have a relatively high level of morale and feeling of security in the system and school.

Needless to say, a school district which met all of the criteria was not found. It was, however, possible to secure the cooperation of one which met all but two of the criteria. The school district selected failed to meet the criteria of (1) not being a suburb of a metropolitan area, and (2) having a pupil transportation system. Some thought was given to superimposing a transportation system on the original structure; but it became apparent that this one change would require many other changes which might jeopardize the consistency of the entire situation. Though the school district had been recently surveyed, some survey work was repeated in order to provide supplementary and up-to-date information. The original survey provided much useful background information.

The identity of the particular school selected will not be revealed. Whitman School is not identical with the prototype school, since many hypothetical problems and issues not actually present in the real school system were introduced. Names and places were disguised, but the general features of the school district were held intact. Only one of the 232 principals who were the subjects in the study identified the prototype school; he had formerly taught in the district.

Preparation of Background Materials

The materials constructed to create Whitman School may be divided into two major categories:

1. Those presented during the first day and a half of the test week with the intention of acquainting the subjects with the school and community. These are called background materials.

2. Those used to present the standard set of administrative problems upon which the principals were to work during the test week. These are called test materials.

This section of the chapter presents a description of how the background materials were developed. The order and manner in which these materials were presented to the principal already has been described (Chapter II).

Film Strip

A filmstrip of 93 frames was made by selecting and arranging 35 mm. color photographs taken by staff members in the prototype community. A tape recorded commentary was made to accompany the film strip. Comments resembled those that might be made by a well informed resident as he conducted a tour of the town. The filmstrip included a map of the school district with the route of the tour clearly indicated. It provided a general "first impression" introduction to Whitman School and the commercial, recreational, and residential areas of Jefferson.

School Community Survey

Although the background community had been surveyed five years before the study began, it soon became apparent that a supplementary survey would have to be made. During the summer of 1957, staff members visited the background school system and secured permission to gather the necessary information after which several weeks were spent locating and assembling it.

Except for minor editorial changes for purposes of securing anonymity, the Jefferson School-Community Survey is an actual survey of the prototype school district -- with the same wording, tables, charts, and maps.

The survey staff visited "Jefferson" extensively, in gathering survey data. The staff interviewed teachers, principals, assistant superintendents, the superintendent of schools and board members, as well as such community leaders as the president of the League of Women Voters, the editor and school reporter for the local newspaper, the mayor, and other political leaders. Publications of the League of Women Voters and the Chamber of Commerce and of the school system were obtained, as well as minutes of the Board of Education meetings. Staff members observed and took notes at meetings of the school board, the P.T.A. the faculty, the principals, and faculty committees. Later, similar meetings and interviews were tape recorded for use in portraying parts of the background and as test materials. To get a fuller flavor of the community, surveyors talked with many lay citizens, ate in Jefferson's restaurants, and partook of some community activities.

The resulting Jefferson School-Community Survey has two major parts. Part I includes a general description of the community, its historical, political, economic, and social setting, and the community dynamics and problems. Part II consists of a general description of the school system, its organization, the instructional program, major administrative functions, and the problems and dynamics of the school system.

Motion Picture

"You Will Enjoy Teaching in Jefferson Schools" was a sound motion picture made by a member of the research staff who is an amateur photographer. It purports to be a film which was prepared by a teacher at the request of the Jefferson Teachers Association, and financed by the board; its purpose is to acquaint prospective teachers with the school system and community of Jefferson. This 45-minute color sound film provides a means for Marion Smith to gain an intimate view of his new job, to meet some of his associates, and to see some of his teachers at work.

Most of the picture was taken inside the prototype of Whitman School. It shows the principal's office, his secretary, teachers, parents, and students. The viewer visits a second grade, where he observes a reading group and watches children learning fractions by measuring the ingredients for Hallowe'en cupcakes. A visit to the fifth grade during a "show and tell" period and a view of pupils during the lunch hour allow him to form more impressions. Later the viewer tours some of the classrooms and special purpose rooms of the school, watches the children leave school for home, and observes a parents' study group and a teachers' meeting after school. As the film ends, he sees streams of commuters returning from the city.

Three full days were spent in the school and community exposing about 1,500 feet of 16-mm. color film--600 feet of outdoor scenes and 900 feet of indoor scenes. Those days were planned on the basis of the desired content of the film, sequence of activities, and lighting factors. Notes taken as the film was exposed later served as resource material for the production of a sound track. Use of a very fast indoor color film obviated the need for photoflood lights and allowed the photographer to take natural close-ups of students and teachers. In contrast to the filmstrip, the film emphasized such items as the internal working of the school, personalities, methods of instruction, building layout, and pupil activities.

Working from a script based on a viewing of the complete final copy of the film and on the notes, a magnetic sound track was prepared. Actual voices of members of the school staff and sounds recorded in the classrooms were used where possible.

Providing anonymity throughout the movie required considerable care. In order to reduce the likelihood that the real Jefferson would be identified, pictures of automobile license plates and of state highway signs were eliminated and the picture of the railroad station was underexposed (creating the effect of evening) in order to hide the name of the town and of the railroad

The Whitman Faculty Study

A document called A Study of the Whitman School Faculty and a complete set of faculty personnel records were prepared to acquaint the principals with the personnel of the school. The faculty study provides a detailed account of the informal relations among members of the faculty and their attitudes concerning the school. This study of the faculty was presented as the work of an advanced graduate student from the local university; it examines the informal social activities at the Whitman School in terms of certain of the concepts developed by Homans.1/

The data reported in A Study of the Whitman School Faculty were collected by direct observation, interviewing people in Whitman, and examining such materials as teachers' schedules

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1/ Homans, George C. The Human Group. New York: Harcourt, Brace and Company, 1950.

and publications on school policy.[2] The report consists of descriptions of the typical sequences of activities at the school and of the informal groups within the faculty. The faculty study also reported on the attitudes of the teachers as evidenced by their opinions on four major issues.

1. Is the concept of the self-contained classroom acceptable or not?
2. What is the attitude of classroom teachers toward consultants?
3. To what degree does the principal, Mr. Jarrett, back up his teachers?
4. What is the degree of parental influence in the school? Is it increasing? Are teachers for or against it?

Data for A Study of the Whitman School Faculty were collected by an observer who spent several weeks in the prototype school.

A series of interviews with teachers was conducted, and direct observation was made of groups of teachers in free settings, such as at lunch, at coffee breaks, and after the children had left. The observer joined as a participant in many of these activities.

The faculty study also was based on recorded data, such as the teachers' handbooks, minutes of faculty meetings, committee reports, and various school publications. The three regular school board meetings for October, November and December were attended by the observer, as well as meetings of committees and the administrative cabinet.

2/ Iannaccone, Laurence. The Social System of an Elementary School Staff. A report of a Type C Project. Unpublished Ed.D. Project, Teachers College, Columbia University, 1958, 171 pp. For a complete report of this study see Griffiths, Daniel E.; Clark, David; Wynn, Richard; and Iannaccone, Laurence. Organizing Schools for Effective Education. Danville, Illinois: The Interstate, 1961.

The personnel files of the Whitman teachers were based on data for the real faculty of the prototype school. They contained objective data on each member of the faculty, including such items as age, marital status, dependents, education, and years of experience in teaching. The names of individuals were, of course, changed to prevent identification.

Handbooks

Reference materials in the form of three official handbooks were prepared. These included the Jefferson Staff Handbook, the Board Statement of Policies and By-Laws and the Law Digest.

The Jefferson Staff Handbook was an adaptation of a small, 31-page statement of rules, regulations, resolutions, policies, and procedures that had evolved in the prototype school system. The handbook was intended to help new teachers become acquainted with procedures used in the Jefferson system and to be a useful reference for all staff members. Its contents include a statement of the philosophy of education of the Jefferson Township Public Schools and sections on organization, teacher personnel policies, classroom and school activities, budget requests, materials of instruction, and professional improvement. The original handbook was edited only to maintain anonymity. The Board Statement of Policies and By-Laws except for changes for the purpose of maintaining anonymity, is also a replica of that in use in the background school system.

The development of a law digest presented more of a problem than did the two other handbooks, since no such document existed in the prototype school. It was decided that the school laws of the state of Lafayette should not be modeled after those of any one state, in order that no examinee have an advantage. Therefore, it was necessary to compile a school code, one which would be typical of many states but which would closely resemble the school law of none.

In September, 1957, two professors of school law were asked to compile the Experimental Edition of Excerpts from the School Code of Lafayette, which was planned as a facsimile of the kind of document some states provide their school administrators. Ostensibly compiled by the Assistant State Superintendent of Education for Law and printed by the State Printing Office, Capitol City, Lafayette, the purpose of the booklet was to simplify the task of referring to the law and to make a knowledge of significant parts of the school law easily available.

In preparing this booklet, the school codes of 48 states were used as source materials. From various statutes were selected elements of the law such as those a principal might find in his state code and that he might need in the day-to-day operation of his school. Actual wording of the original statutes, with annotations, was used to provide more realism. Every law used appears in the statutes of some state, in an essentially similar form. Care was taken to preserve a number of gaps, inconsistencies, and vaguely stated laws, such as are often found in a school code. Where necessary the law was made consistent with the Statement of Policies and By-Laws of the Board of Education and with the Jefferson Staff Handbook. The document includes a certification of authenticity by the Secretary of State of Lafayette, the State constitutional provision for the establishment of free schools, and excerpts from the school code of the State of Lafayette, with chapters on general provisions, pupils, course of study, textbooks and supplies, teachers, and school buildings and property. A detailed table of contents was furnished.

Additional Background Materials

As the principals became more familiar with Jefferson and the Whitman School, background materials of a more detailed nature were provided for study. Among these materials were a report of achievement test scores, a floor plan of Whitman, a copy of the school census, a class-size list, a staff roster, and a school calendar. The materials were prepared by adapting existing documents.

Background Tapes

Another phase of each principal's orientation to his new job included "overhearing" three incidents which conveyed information for his later use.

The first taped episode was a conversation in the teachers' room between Eleanor Blake, a fourth-grade teacher, and Patricia Lee, the school librarian. They had just learned that Principal Jarrett was to leave and expressed their feelings about the past and their hopes for the future. A part of their conversation is presented at the beginning of Chapter III. Two experienced teachers played the roles of Eleanor and Pat. They worked from a general outline of the topic, not from a script.

The second episode was a comment made at a P.T.A. meeting on "How Can Our School be Improved?" The panel member, speaking on "Some Shortcomings of Whitman School from the Point of View of a Parent," was the mother of a second-grader. She was active in community affairs and had been on many P.T.A. committees. She was speaking about her own child's school.

In the third incident, Dr. Donnelly, the superintendent of schools, had called a meeting of his principals on the morning after a meeting of the Board of Education. In the recording the superintendent reviews for his principals the topics discussed at the board meeting. This recording was made at an actual meeting of the superintendent with his principals in the prototype school system.

Preparation of Administrative Tasks

After his orientation to Whitman School, Marion Smith began work on a wide variety of administrative tasks. Many of these were posed by items placed in the three in-basket tests. The nature and development of these in-basket tests will be considered in the first part of this section.

Development of In-Basket Tests

An in-basket test may be thought of as a job sample test of administrative performance. The main feature of the test is the presentation of realistic problems in such a way as to elicit responses which fall within the realm of administrative behavior. Records of these responses provide a basis for assessing the various qualities an individual displays in his administrative decisions and actions. The selection of the administrative problems to be considered is an important step in building an in-basket test. The extent to which it may be possible to generalize from the analysis of in-basket behavior to administrative behavior on the job depends largely on the extent to which the problems presented by the in-basket tests are representative of significant problems encountered in real-life administration.

Development of the in-basket test materials involved the following steps:

1. Analysis of the job of the elementary principal.
2. Identification of administrative problems.
3. Development of specific incidents based on problems.
4. Development of items from incidents.

Analysis of the Job

Griffiths has brought together two analytical frameworks to form a conceptual scheme for describing the work of school administrators. This analysis has been found useful in preparing job descriptions for the various administrative positions in public education. 3/

The two frameworks that were brought together were those of Livingston and Davies 4/ and of Katz. 5/

3/ The work was done in a study entitled Cooperative Development of Public School Administration in New York State. The publication series, Your School and Staffing, included the following pamphlets: The School Business Administrator, The Elementary School Principal and Director, Instruction Staff Administrator, and Secondary School Principalship. Albany: New York State Teachers Association, 1955.

4/ A Developing Concept of the Superintendency of Education, Cooperative Development of Public School Administration. Albany: New York State Teachers Association, 1955.

5/ Katz, Robert L. "Skills of an Effective Administrator." Harvard Business Review, Vol. 33, No. 1, January-February 1955, pp. 33-42.

According to Livingston and Davies, the job divides into four major parts as follows:

1. Improving educational opportunity.
2. Obtaining and developing personnel.
3. Maintaining effective interrelationships with the community.
4. Providing and maintaining funds and facilities.

Katz developed the Three-Skill approach to the analysis of the work of an administrator. His emphasis was on what a man does in an administrative position. The three skills and their relevance to the elementary school principalship are as follows:

1. Technical skill involves specialized knowledge and ability, including the methods, processes, procedures or techniques that the principal would need in order to carry out his duties as principal.

2. Human skill involves the ability to work effectively as a group member and to build cooperative effort within the faculty which he heads. It may be contrasted with technical skill: working with people versus working with things.

3. Conceptual skill involves the ability to see the organization as a whole. It includes recognizing the interdependence of each unit and how changes in one unit affect all other units.

These two schemes were put together so as to form a grid with the four areas of content on the vertical axis and the three skills of administration on the horizontal axis. The resulting grid is shown below:

	Technical (T)	Human (H)	Conceptual (C)
E. Educational Program	ET	EH	EC
P. Developing Personnel	PT	PH	PC
R. Community Relationships	RT	RH	RC
F. Maintaining Funds and Facilities	FT	FH	FC

The grid contains twelve cells which provide twelve categories by which to organize the various aspects of the job of the elementary school principal. [6] These are

Technical -- educational program
Technical -- personnel
Technical -- community
Technical -- funds and facilities

Human -- educational program
Human -- personnel
Human -- community
Human -- funds and facilities

Conceptual -- educational program
Conceptual -- personnel
Conceptual -- community
Conceptual -- funds and facilities

Identification of Problems

For purposes of this discussion, a problem is any situation which is viewed as being less than satisfactory. For example, the lack of a plan for a continuing program of public relations, or a constant decrease in the extent of P.T.A. participation in school affairs, would probably be seen as an unsatisfactory state of affairs by most principals, and, hence, for them each would present a problem.

Ideas for problems for use in planning in-basket test items were obtained from many sources. The Harvard Graduate School of Education, the University of Kansas, Ohio University, and Teachers College, Columbia, provided a voluminous file of case studies. For a period of several months the local newspaper from the prototype community was subscribed to, and all articles dealing with the schools and with education generally were clipped. Staff members visited several school systems to observe principals in action and to collect materials. Forms, printed materials, reports, and similar documents were gathered as possible sources of suggestions for in-basket problems.

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[6] For a more complete discussion of the analytical framework see Griffiths, Daniel E. *Human Relations in School Administration*. New York: Appleton-Century-Crofts, 1956, Chapter 1.

Ideas for problems were systematically organized in a loose-leaf notebook known as the Problem Book. Problem ideas were classified under each of the 12 cells of the grid referred to above. The Problem Book thus contained a classified assortment of ideas basic to the development of in-basket items.

Development of Incidents Based on Problems

An "incident" is a description of a specific occurrence of a problem, in concrete terms. For example, under the problem referred to earlier -- that posed by the lack of a continuing program of public relations -- an incident might be as follows: A local radio station volunteered to contribute 15 minutes of air time weekly to the school system as a community service, and a plan must be made if the time is to be used. Under the problem created by a constant decrease in the extent of P.T.A. participation in school affairs, an incident might be this: The P.T.A. voted to make the school library its project for the new school year, but it has not been able to get started. For each problem in the Problem Book, one or more "incidents" were created; these incidents were useful as concrete statements of problems which suggested the nature of actual in-basket items.

Development of Items from Incidents

An "item" is the actual document that presents the incident in the in-basket test. For example, stemming from the above public relations problem and incident, Marion Smith might find in his in-basket a memo from the superintendent asking that the local radio station's proposal to contribute free air time be considered, pro and con, and that a summary of Smith's views on the question be prepared for the next meeting of the principal's advisory council. For the second example, the in-basket item might be a file copy of last year's P.T.A. minutes showing the result of the vote, attached to the carbon copy of a note from Mr. Jarrett (the previous principal) to the P.T.A. president offering to prepare some practical suggestions to the P.T.A. on their library project.

Many more items were prepared, in draft form, than were needed for the three in-baskets. Between three and four hundred items were written, of which 96 were finally used in the three school in-baskets. In choosing the items, it was necessary to face the question of how many items should be chosen to represent each of the 12 cells of the grid by which the principal's job had been analyzed.

An advisory group composed of school principals and administrators was asked to consider the importance of each of 12 cells and make a recommendation as to the proportion of items which should be chosen to pertain to each area. Their recommendation was the basis for the following distribution of the 96 items in the 12 cells:

	Technical	Human	Conceptual	Total
Educational Programs	7	6	6	19
Developing Personnel	9	22	8	39
Community Relationships	5	15	6	26
Maintaining Funds and Facilities	6	3	3	12
Total	27	46	23	96

Figure IV-1 presents in summary form the illustrations just described, showing examples of problems, incidents, and descriptions of the items which were developed for one cell of the grid.

Description of In-Basket Items

A brief description of each of the 96 items in the three school in-baskets follows. The items are classified according to the 12 cells of the grid. The letter A, C, or D at the left indicates which in-basket contains the item, and the number shows the position of the item in that in-basket.

Cell ET. Educational Program - Technical Problems

A-24 Letter from a college professor requesting permission to use students of Whitman School in a psychological experiment.

A-26 Memo from the assistant superintendent for instructional services concerning procedures for parent conferences.

A-27 Report from a doctor concerning tests he has administered to a Whitman student.

D-7 Memo from secretary reporting a request by a teacher that a Congressman who is to visit her class today speak to the school.

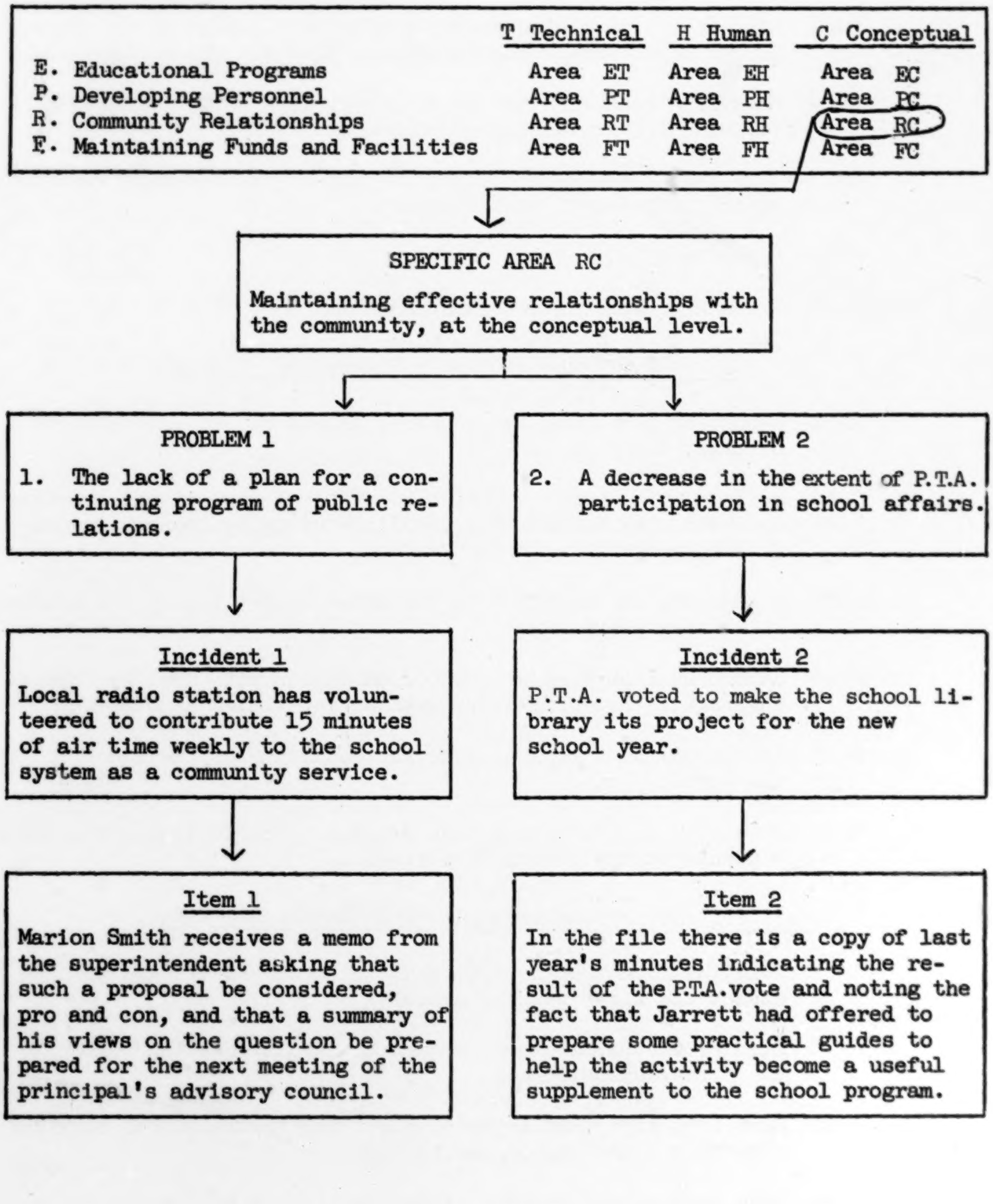
D-10 Staff newsletter containing the test schedule for the year.

D-12 Requisition for supplies including request for gold and silver stars.

D-26 Memo from the superintendent in regard to Fire Prevention Week.

FIGURE IV-1

PARADIGM SHOWING THE DEVELOPMENT OF IN-BASKET TEST ITEMS



	T Technical	H Human	C Conceptual
E. Educational Programs	Area ET	Area EH	Area EC
P. Developing Personnel	Area PT	Area PH	Area PC
R. Community Relationships	Area RT	Area RH	Area RC
F. Maintaining Funds and Facilities	Area FT	Area FH	Area FC

SPECIFIC AREA RC

Maintaining effective relationships with the community, at the conceptual level.

PROBLEM 1

1. The lack of a plan for a continuing program of public relations.

PROBLEM 2

2. A decrease in the extent of P.T.A. participation in school affairs.

Incident 1

Local radio station has volunteered to contribute 15 minutes of air time weekly to the school system as a community service.

Incident 2

P.T.A. voted to make the school library its project for the new school year.

Item 1

Marion Smith receives a memo from the superintendent asking that such a proposal be considered, pro and con, and that a summary of his views on the question be prepared for the next meeting of the principal's advisory council.

Item 2

In the file there is a copy of last year's minutes indicating the result of the P.T.A. vote and noting the fact that Jarrett had offered to prepare some practical guides to help the activity become a useful supplement to the school program.

Cell EH. Educational Program - Human Problems

C-3a	Mother wants to discuss daughter's school problems with principal.
C-23	Memo from a teacher concerning a student unable to do class work. Scores on the Stanford Achievement Test for whole class is attached.
C-24	Memo from teacher attached to letter from mother regarding home teaching for convalescing daughter.
C-25	Note from teacher protesting the methods of teaching fractions used by homemaking teacher.
C-26	A bundle of six report cards.
D-14	Transfer record of a Whitman student.

Cell EC. Educational Program - Conceptual Problems

A-32	Report of the Committee on Study Habits of Jefferson School District Students.
C-19	Memo from assistant superintendent for instructional services regarding the report of a committee studying changes in the mathematics and science offerings.
D-8	A memo asking reactions to the above report (dated two months later than above memo).
D-19	Report on a program of outdoor education with memo by teacher suggesting that similar program be instituted at Jefferson.
D-23	Recommendations of the Jefferson Committee on the Education of the Gifted.
D-24	Note from teacher suggesting program for orienting sixth grade students to the junior high school.

Cell PT. Developing Personnel - Technical Problems

A-1	Telegram from teacher indicating that she is ill and will be absent the first week of school.
A-3	Memo from superintendent regarding faculty meetings prior to the first day of school.
A-12	Memo from assistant superintendent for instructional services regarding a meeting of new teachers.
A-21	Memo from superintendent regarding bicycle riding.

Cell PT. Developing Personnel - Technical Problems (Contd.)

A-23 Letter from doctor asking that student be given a half hour rest each morning and afternoon.

C-9 Memo from assistant superintendent for instructional services regarding practice teachers.

C-15 Four letters written by teachers for Marion Smith's signature.

C-17 Confidential memo from superintendent concerning a civil defense drill.

D-4 Report of absence of a teacher.

Cell PH. Developing Personnel - Human Problems

A-2 Note from secretary indicating she had done as requested.

A-4 Note from janitor regarding open doors.

A-6 Letter from superintendent asking cooperation in encouraging teachers to join Jefferson Teachers Association.

A-7 "While you were out" form asking Marion Smith to call Mrs. Donnelly.

A-17 Letter from a former Whitman student offering her services. Memo from superintendent attached; he recommends her.

C-1 Personal letter from assistant superintendent for instructional services stating her secretary has resigned and she is offering job to Marion Smith's secretary.

C-2 Note from secretary indicating she is ill and has gone home.

C-27 Janitor caught four boys smoking in the boys' toilet and teachers are looking to the principal for disciplinary action.

C-30 Two teachers report trouble brewing with a mother of a set of brothers.

C-31 Boy sent to office for picking fights with younger boys on playground.

C-5 Letter from teacher of retarded children complaining about actions of other students toward her children.

C-12 Notice encouraging teachers to use teaching aids and note to principal asking his reaction.

C-14 Letter from teacher reporting money stolen from her desk and accusation of a student.

Cell PH. Developing Personnel - Human Problems (Contd.)

C-16 Note from music teacher complaining that a teacher always sends students to him late.

C-18 Memo from secretary reporting that a teacher is very disturbed because of a difference of opinion with a parent.

C-20 Memo from secretary stating that a Whitman teacher had been invited to speak at a NEA meeting.

C-22 Letter from teacher complaining that she was being deprived of use of school facilities.

D-1 Memo from secretary reporting a teacher in the hospital.

D-2 Memo from superintendent requesting principals gather data on outside employment of teachers.

D-5 A batch of data on a student who is having difficulty in gym classes.

D-6 Taped situation -- Secretary tells the principal that a child has vomited. The teacher can't find the janitor; what shall she do?

D-15 Request of parent to allow child to leave school early and an attached memo from teacher opposing request.

Cell PC. Developing Personnel - Conceptual Problems

A-11 Letter from superintendent asking Marion Smith to prepare a list of duties; attached is the list of the previous principal.

A-28 An application from a teacher for a sabbatical leave.

A-29 A staff newsletter announcing in-service courses for teachers.

C-32 The secretary reports that certain teachers are not checking their mailboxes and she suggests a memo to all teachers to remedy this oversight.

C-4 A letter of application for a teaching position at Whitman.

D-18 Teacher's request for a statement to a placement agency.

D-13 Memo from the superintendent to elementary school principals regarding ideas as to advisability of employing assistant principals.

D-31 A questionnaire from a doctoral candidate on the subject of principal perceptions of superintendents.

Cell RT. Community Relationships - Technical Problems

A-8	"While you were out" form indicating a visitor from the state university will arrive shortly.
A-13	Draft of a letter to parents prepared by kindergarten teachers.
A-15	P.T.A. membership forms left at office by membership chairman.
A-19	Memo from secretary attached to Bulletin to Parents prepared by previous principal.
C-7	Letter from graduate student who wishes to visit Whitman School.

Cell RH. Community Relationships - Human Problems

A-9	Note from minister welcoming Marion Smith to the community.
A-10	"While you were out" form indicating a representative of the press had called.
A-20	Letter from woman living near Whitman telling the principal to keep children off her property.
C-28	Mother is concerned because teacher has recommended that daughter see the school psychologist.
C-6	Complaint of parent concerning temperament of a Whitman teacher.
C-8	A letter from a parent protesting that her child is deprived of use of library because her class is scheduled during released-time period. Secretary has attached library schedule to letter.
C-10	Letter from citizen protesting a letter to editor of local paper written by Whitman teacher.
C-11	Letter from a father who feels the school is undermining his efforts to instill social graces in his children.
C-13	Letter from a mother protesting the lack of doors on toilets at Whitman.
D-3	Letter from mother complaining that her child's class is not progressing as fast as other classes.
D-9	Memo from secretary stating that a merchant has called reporting that children have damaged two pails.
D-20	Taped situation -- the secretary reports that the fire hydrant has broken just minutes before a fire drill is scheduled. She also says that a woman is in the office and wants to take a boy out of school. She says she is a neighbor of the boy's mother; the mother has had an accident and wants to see her son.

Cell RH. Community Relationships - Human Problems (Contd.)

D-21 Memo from superintendent urging principals to encourage full staff participation in the Community Chest Drive.

D-22 Letter from a mother protesting lack of shower bath facilities at Whitman.

D-27 Letter from teacher reporting on a parent complaint.

Cell RC. Community Relationships - Conceptual Problems

A-16 Letter from the chairman of the League of Women Voters program committee inviting Marion Smith to speak on school facilities.

A-18 Report of a P.T.A. meeting indicating that Whitman School Library is to be their project for the current year.

A-22 Note from P.T.A. committee requesting suggestions.

A-31 Announcement of after school workshops in art, science, and nature.

D-11 Request to be a discussion leader at a P.T.A. meeting.

D-29 Newsclipping reporting that a local minister says the schools are teaching atheism. Attached is a memo from the superintendent.

Cell FT. Maintaining Funds and Facilities - Technical Problems

A-5 Memo from the assistant superintendent for business management reporting a delay in receiving pencils.

A-25 A copy of the 1957-1958 P.T.A. budget.

A-39 A bundle of forms used at Whitman School.

A-33 An advertisement for instructional materials.

C-21 Copies of budget request forms.

D-25 "Requisition for supplies" form for principal's approval.

Cell FH. Maintaining Funds and Facilities - Human Problems

C-29 Janitor wants memo sent to teachers telling them to keep school clean.

D-16 Memo from the assistant superintendent for instructional services concerning the use of forms for parent conferences.

D-17 Note from music teacher reporting a broken violin for which parents will not pay.

Cell FC. Maintaining Funds and Facilities - Conceptual Problems

A-14 Two clippings giving increased population figures with a memo from the superintendent.

D-28 Telegram from photographer who requests permission to take pictures of Whitman students.

D-30 Announcement of free copies of constitution obtainable from a distilling company.

Realism of In-Baskets

In many cases it was possible to add to the realism of problems involved in the in-basket test by interrelating items and relating items to background material.

For example, Item C-6 in the December in-basket was a letter to Marion Smith from Norman E. Richards. The letter expressed disturbance over what his son reported of his days at school and suggested that Mrs. Duval was temperamentally unsuited to her position as first-grade teacher, since the classroom atmosphere was one of tension rather than relaxation. Item C-5 was a note from Shirley Ostenberg, teacher of a special class at Whitman, requesting that something be done about the actions of some of the regular pupils toward the children in her class. She reported that hardly a day went by without tears brought on by the teasing of the other children, especially first graders, whose actions she thought stemmed largely from the attitudes of Mrs. Nasca and Mrs. Duval. Item C-30, a memo to Marion Smith from his secretary, Ruth Platz, included the following paragraph:

> Mrs. Blake and Mrs. Duval were in to complain about the Knowl boys' mother. She had been in to "visit" their classrooms today for the third time in a week. They're very unhappy about all the interference. Mrs. Knowl herself stopped by on her way out to make some suggestions about the way the two grades are being handled. Looks like a storm is brewing.

From his personnel records, Marion Smith could learn that Denise Duval was certified in special education and taught a special class at Longfellow School for 22 years. Since 1944 she had taught first grade at Whitman. The only available end-of-year report (1954) stated that her first-grade class had made a fine record on their achievement test. The Study of the Whitman School Faculty suggested that Mrs. Duval was not well integrated into the social system of Whitman. Mrs. Nasca was closer to Mrs. Duval than other teachers. Mrs. Nasca had taught music to Mrs. Duval's class and worked with both of their classes on a series of assemblies. Thus it was possible to piece together quite a lot of scattered information about Mrs. Duval as a teacher.

The methods of presentation also added to the realism of the situation. The items of the in-basket test were not all presented as pieces of paper collected together in one bundle. Some items were presented as a mail delivery after the principal had started work on his in-basket. Other interruptions were provided by the use of tape-recorded interruptions by the principal's secretary. In these cases the principal's attention was attracted by a knock on his door (tape recorded) and an excited report of an emergency situation.

Instructions for Taking the In-Basket Test

The instructions to an in-basket test are especially important, because it is necessary to create an attitude in the examinee which is different from the usual test-taking attitude. The usual test requires that the examinee devise or select a "right" answer to a large number of problems each of which is clearly identified. In the case of an in-basket test, on the other hand, the objective is to elicit behavior of the sort a person might typically display on the job. There is interest not only in the substantive aspect of what is done, but also in the style with which it is done. Therefore, the attempt was made in the instructions to get the examinee to behave spontaneously as though he were on the job. He was not to indicate abstractly what should be done or what he would do. He was instead to actually do something -- write letters or memoranda, prepare agenda, make notes or reminders for himself just as he would at his own desk.

It was necessary to provide a situational setting for each in-basket test, which gave a plausible rationale for the accumulation of a heavy load of work in the principal's in-basket. An attempt was made to structure each situation in such a way as to require the principal to attend to the problems personally and to make it difficult for him to postpone the work or assign it all to others.

The first in-basket was set for Labor day, just prior to the opening of school and contained 33 items. The printed instructions to the principals were as follows:

INTRODUCTION TO LABOR DAY IN-BASKET

> Along with these instructions we have given each of you two large envelopes. One marked Packet A contains special test materials which will be described to you in more detail later, and the other, Packet B, contains an assortment of papers, forms, pencils, paper clips, etc., which you are to use in your work this morning. These materials represent the first of four "in-basket" tests that you will be working with today and tomorrow.
>
> The materials in Packet A were left in your "in-basket" for you by your secretary, Ruth Platz. As you will recall, you accepted the position of principal of Whitman School in May, but you had already agreed to spend the summer as a Camp Director some distance away. You were able to get into Jefferson on the afternoon of August 27. The next day was consumed in moving into

a temporary home and generally getting settled. You managed to visit your office for a few minutes Friday, August 29, at which time you met your secretary and asked her to get together any material you should see and put them on your desk. The material in Packet A is what she has left for you.

Today is Labor Day, September 1. You have just arrived in your office and have only three hours before you will have to leave for an appointment with a real estate agent. You do not plan to return to your office. You are aware that tomorrow is likely to be a difficult day and that you will not have time to do any substantial amount of work in your office. You hope that the three hours you have this morning will give you a chance to take care of the more pressing problems and a chance to plan for some of the problems that you would need to be concerned with in the near future.

No one is in your office except yourself. Your secretary volunteered to change her plans for a Labor Day weekend trip and to come into the office, but you declined her offer. You must, therefore, do what you can with the material in Packet A without help.

Your task is to read this material and take appropriate actions. You should behave as if you are actually on the job. Use the materials in Packet B to write down everything you decide to do or plan to do. Make memos to yourself about things you want to do later. Draft letters, if appropriate, for your secretary to prepare. (Record in the form of notes what you say on the phone.) Outline plans or agenda of meetings you want to call. Sign papers, if appropriate.

Everything you decide or do must be in writing. You should always take as much action as you can with the information available to you, but you must also avoid making any assumptions that are not reasonably supported by the background information you have been given or by the "in-basket" material itself.

When you prepare a letter, memo, or the like, unless it is obvious from its contents, try to identify it in such a way that we will know to what material you are referring, or simply clip it to the material involved. We know that many of these things normally would be handled more informally, but we must be able to know what you do.

Be yourself, Marion Smith. Behave as though you were really on the job. Do not merely write descriptions of what you would write; write instead, the actual letters and memos!

In your work this morning you may make use of any or all of the background material which we have given you over the last two days. You will have two hours and fifteen minutes to work on this "in-basket." At the end of that time, we will interrupt you and give you another small task, which will be explained at the time.

The following directions were given orally before the principals began work on In-Basket A:

> Before you start I want to emphasize one thing: You are Marion Smith and you are to behave as though you were really on the job; but everything you do or plan to do must be in writing.
>
> Let me mention the specific problem of phone calls. If you want to make a telephone call, indicate what you say or what you plan to say on the phone. You cannot, of course, know what the other person says in reply. Therefore, you should not report what the other person says. Nor, of course, can you at other times treat as fact assumptions you make about what others will do.
>
> Are there any questions about the situation or what you are to do?

In-Basket C which contained 32 items, occurred later in the year, after school had been under way for several weeks. The situation was described to the principals as follows:

> INTRODUCTION TO DECEMBER 4TH IN-BASKET
>
> Your task this afternoon will parallel your activity of the morning. A large envelope marked Packet C has been given to each of you. The contents represent your second "in-basket" test. In terms of time, three months have elapsed and you are now more settled in your position as principal of Whitman School.
>
> Today is Thursday, December 4, 1958. It is your first day in the office since Friday, November 28. Sunday you left Jefferson to attend the Lafayette State Elementary Principals' Association Convention in Luxor, Lafayette. You returned last night. This morning was consumed by a meeting with the superintendent and a conference with one of your teachers. You have about three hours this afternoon to take care of the work that has accumulated in your absence. You have an engagement this evening. There will be no opportunity to return to your office again today. You must take care of any pressing problems and plan future actions in the time you have now.
>
> Ruth Platz has left a note for you bringing you up-to-date, but she will not be in the office at all. She left early yesterday suffering from a cold. Once again you are alone in your office and must do what you wish with the materials in Packet C without any assistance.
>
> Your task is to read this material and ....

In-Basket D was set in the spring. It contained 31 items and was introduced to the principals as follows:

INTRODUCTION TO FEBRUARY 10TH IN-BASKET

> Your work this morning will be quite similar to your work yesterday. However, there will be one major change. During the morning, while you are at work in your office, you will be interrupted once by the morning mail delivery and twice by your secretary. We will simulate the latter type of interruption with tape recordings. These interruptions, which will be part of your morning's task, will pose additional problems for you as principal. An envelope marked Packet D has been given to each of you. Both the contents of this envelope and the problems posed by the interruptions are part of this "in-basket" test.
>
> In terms of time, you have been in your position at Whitman School for about five months. Today is Tuesday, February 10, 1959. For the past few days you have been able to spend very little time in your office. In fact, since last Thursday afternoon, you have been in conferences or otherwise occupied and have not been able to get to your paperwork. Monday, February 9, 1959, for example, you spent the morning with an important visitor and divided the afternoon between a committee meeting and a conference with Mr. Davies.
>
> One other event complicates the situation. Two weeks ago, Miss Helen Tague began her first day as your new secretary. Ruth Platz is now working in Dr. Seward's office. Miss Tague had only two days with Ruth before Ruth had to be in her new position; therefore, Miss Tague has not been able to get well oriented. Miss Tague is trying to do a good job, but has much yet to learn. You have not had as much opportunity as you would have liked to help her get started.
>
> This morning, February 10th, is free from appointments and offers you the first chance to get at the accumulated work. You must take care of pressing problems and plan future action in the time you have now. Miss Tague has left the materials in Packet D on your desk.
>
> As before, your task is to read this material and....

The "small task" which the principals were given at the end of each in-basket was to fill out the Reasons for Action form, which is described more fully in Chapter VI. This form provided space in which the principal could state very briefly what he did in response to each item and why. It was needed for scoring purposes in order to clarify the actions taken.

Development of Other Administrative Tasks

Although it was possible to build into in-baskets a wide range of administrative problems, it seemed obvious that there were definite limitations with regard to the types of responses that could be elicited. These limitations presumably were to be found mainly in the areas of oral behavior and face-to-face interaction with people. Although responses to in-basket items reveal much more than cognitive performance, it was felt that some attempt should be made to include in the test week materials to assess interpersonal behaviors. The devices which were developed deal with (1) the principal's role as the instructional leader and supervisor, (2) his skill in actual face-to-face interaction, and (3) his ability to speak before the public and to write for purposes of public consumption. The construction and use of special kinescopes, tape recordings, and other techniques to cover these aspects of the job of the principal will be described in this section.

The Kinescopes

In order to obtain measures of some of the supervisory aspects of the principal's job, Marion Smith was shown three kinescopes depicting classroom scenes showing three teachers in action. At the completion of each film he was instructed to prepare in outline form the comments he might make to the teacher in an interview with her and to complete a probationary report to be sent to the central office.

The kinescopes were made through the facilities and cooperation of the State University College of Education, Brockport, New York. The college specializes in the training of elementary school teachers.

It had participated in a year-long program of instructional TV for the New York State Education Department, with the result that experienced "critic teachers" with one and a half years of experience in closed circuit TV were available. Three of these teachers voluntarily participated in portraying teachers of three different qualities.

In planning the kinescopes, members of a class in supervision at Brockport were asked to identify some of the characteristics or practices which should be demonstrated by each of the three teachers. These students developed a list of good teaching practices and a list of poor ones to be used as sources of ideas for the demonstration teachers. Only practices which could be shown in a kinescope recording were considered.

Practices Considered as Good

1. Teacher-pupil planning of a trip.
2. Teacher-pupil planning of the day's or week's work.
3. Pupils' evaluation of day's work or of a project.
4. Meaningful assignments.
5. Sympathetic counseling of individual students.
6. Meeting individual needs of pupils through group work.
7. Attempts to understand child behavior in the classroom.
8. Active learning -- chairman and other leaders of a club or other activity, pupil oral reports and projects, children producing creative material (art work, poetry, etc.).
9. Teacher and pupils sharing humorous situations.
10. Panel discussion, class meeting.
11. Use of parents and other resource people to tell of experiences, give demonstrations, etc.
12. Good teacher personality demonstrated through smiling manner, rapport with pupils and good listening ability.
13. Teacher use of permanent record data on pupils.
14. Teacher preparation of cumulative pupil records.
15. Parent-teacher-child conferences about child's growth in learning.
16. Personal neatness of teacher in dress, desk, etc.
17. Evidence of good teacher planning by readiness to begin a day or lesson with necessary materials at hand.
18. Use of up-to-date, functional material, illustrations and problems.

Practices Considered as Poor

1. Ignoring special capabilities of a superior child (forcing him or her into a common pattern of classroom activity).
2. Misuse of any good practice, e.g., failure to carry out teacher-pupil plans.
3. Failure to properly introduce or follow-up a motion picture film.
4. Assignments for punishment.
5. Inattentiveness of pupils disregarded by teacher.
6. Standardized, regimented art activities (e.g., all Valentine's Day designs alike).
7. Teacher's over-familiarity with pupils -- no dignified reserve or social distance.
8. Inappropriate clothes, putting on cosmetics in front of children.
9. Teacher prejudice caused by a past year's entry in a pupil's cumulative record.
10. Lack of interest of teachers in pupils' activities, contributions, etc.
11. Use of drill for sake of drill and without meaningful approach to the learning experience -- especially in arithmetic.
12. No attempt to develop readiness for a learning activity -- especially in reading.
13. No review and tie-in with past learning experiences.
14. Poor relations with other teachers -- too informal meeting with other teachers in front of pupils, use of first names over Public Address systems, children disorderly while other teacher in room talking with regular teacher, disrespectful comments to pupils about other teachers.
15. Teacher's disregard of pupil's unknowing lack of respect in referring to another teacher by first name, etc.
16. Voice too loud or otherwise inappropriate.
17. Lack of emotional control of teacher.
18. Disloyalty to school principal shown by sneering or apologetic manner of reading an announcement from the principal to the pupils.

Two films were made of each teaching episode by cameras in different locations; the project staff was then free to review, edit, splice, and entitle the films. It was planned that each film should be "rich" enough to justify fairly extreme judgments, and should include both long shots and a number of specific incidents. The content of each kinescope is described in Chapter IX.

Taped Conference Recordings

A series of five conferences involving different educational problems were tape recorded. These conference recordings provided an opportunity for the principals to demonstrate sensitivity to issues and problems of an educational content as they might be suggested by discussions of educational problems by professionally trained personnel.

All the tape recordings were made at actual conferences at the prototype school. Sufficient editing of the tapes was done to remove statements which would permit identification of people or community. One conference was a conference between a parent and a teacher; another involved a discussion of a problem child by a teacher, the school psychologist, and other members of the school staff. A third tape contained a portion of a speech delivered by the superintendent of the prototype school; the other two tapes were recordings made at a special Board of Education meeting attended by all the principals of the prototype school.

During the test the principals in the study were supposedly present at each conference. At the end of each recording, the principal responded by answering a set of four specific questions. The content of the recording and the questions are described more fully in Chapter IX.

Interaction Problem

The group interaction problem was developed as a device for making observations of the performance of the principals in face-to-face situations. The problem presented for solution is that

Marion Smith has been promoted and it is necessary to recommend someone to fill his position. The principals were assigned to committees; each participant was given information about the three candidates for the position. The committee was asked to recommend one candidate to the superintendent. A member of the research staff played the role of the assistant superintendent for business and in this role moderated the meeting; another member of the research staff was an observer. During the committee discussion, one staff member kept a record of the statements made by the five committee members, while the other filled out a form in which the statements of each member were recorded under headings which described the content of the statement. The interaction problem is described fully in Chapter X.

The subject of the conference -- recommending a new principal for Whitman School -- was chosen because it permitted the principals to make use of the information they had acquired about their school and community and because it was a problem they had seldom if ever faced in real life.

Several preliminary runs of the interaction problem were conducted, some involving members of the research staff. These preliminary trials were useful in determining appropriate time allotments and especially for determining what categories should be used in the observer's Group Report Form. The content categories were developed mainly through attempts to classify the comments made by participants in the preliminary tryouts.

Reactions of the Principals to Whitman School

Many of the principals who were the subjects during the test week have reported that the simulation of a working situation for an elementary school principal was very effective. Whitman School was real to the participants, in spite of the absence of the smell of chalk dust. One principal of many years' experience reported that all except one of the in-basket problems had happened to him, the exception being a proposed visit to the school by a United States Congressman. Vivid images of the people in Jefferson were built up, and many firm likes, dislikes, loyalties, and prejudices were developed. It is the opinion of the research staff members who administered many of the test weeks that one of the hopes of the study was largely realized: the participants behaved as principals of a school, not merely as examinees taking a test.

This chapter completes the description of the test situation and how it was created. The chapter to follow directs attention away from Whitman School to the characteristics of the 232 Marion Smiths who served as its principal.

CHAPTER V

THE PARTICIPANTS IN THE STUDY

Criteria for the Sample

In obtaining subjects for this study, the objective was to find principals who would bring into the sample as many as possible of the differences found in the contemporary population of elementary school principals. It was reasoned that if the sample of principals represented the various differences in biographical and cultural factors found in the population of principals, then their behavior would reflect the different styles and approaches that characterize the population in the kind of school situation simulated by the experiment. Thus a sample was sought containing both men and women subjects, differing in biographical factors such as age, occupational experience, professional education, and on cultural factors, such as are engendered by differences in regional or local hiring practices and community customs and norms.

Since the object of the research was to describe and understand patterns of administrative behavior, and not to determine the frequency with which certain kinds of administrative behavior occur or establish norms for such behavior, no effort was made to assure that the sample be representative of the population with regard to any variable.

The criteria actually used for selecting experimental subjects were numerous, informal, and designed to give a wide representation. As can be seen from inspection of Table II-1 the subjects were obtained from many sections of the country, from communities of different sizes, from systems with vastly different salary and pupil-expenditure levels, and with very different reputations for excellence.

For reasons of administrative convenience, relatively few principals were included from very small school systems. 1/ As a result, only two principals in the study sample spent some time each day in classroom-teaching. If there is reason to believe that teaching principals vary in some systematic way from the full-time principals of the present sample, the findings of the research may not be generalizable to teaching principals.

Selection took place at two levels: the school system and the individual principal. There was no practical way to include principals working in systems which did not choose to participate. Since interest and rapport were essential if the subjects were to do the work required for full participation in the research, only volunteer principals were used. This use of volunteers did not appear to restrict the sample greatly, though it may have produced a more self-confident and trusting group than might have been found in a random sample drawn from the same school systems.

The final selection of participants within a school system was done by the superintendent, or the coordinator appointed by him, with consultation of a project staff member. The school-appointed coordinator was asked to appoint from among the group of volunteers, not alone the best or the most experienced principals, but a cross section of the group, including some who were regarded as experienced and competent, some as weak, some as young and promising, and so forth.

1/ It took between one and three trips and 10 to 60 hours of staff time to arrange for a school system to participate, to administer preliminary tests, and to set up a testing center. Even more time was required to arrange the administrative details with small systems because smaller systems did not have experienced personnel to handle the problems that participation entailed.

The reader may judge from the tables in this chapter the extent to which these selection criteria were actually used.

Background and Experience Characteristics[2]

Of the 232 principals studied, 137 were men and 95 were women. Twenty-seven men and 10 women were Negroes; all others were of European extraction. Thirty-eight principals were employed in the northeastern census area, 104 in the southern, 30 in the north-central, and 60 in the western. One hundred thirty-two were in the school systems of large cities, 89 in small city and suburban systems, and 11 from county or rural systems.

Table V-1 presents the distribution of the ages of the 232 principals for men and women separately. As will be seen from Table V-1, women in the sample are on the average almost 10 years older than the men. This difference is apparently in part a consequence of recent changes in hiring and promotional policies: more men than formerly are now hired as full-time principals. This accounts for the predominance of men in the group under 40. In the older age range, the predominance of women is undoubtedly due largely to earlier hiring practices favoring women. The difference may also be a result of the tendency for the position to be treated as terminal for women, but as a step toward a position of greater responsibility, often the superintendency, for men.[3] To the extent that this is true systematic differences between the sexes are to be expected, not only because a portion of the more experienced men have moved into other positions, but because the attractions of the job are somewhat different for men than for women.

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[2] Information summarized in this section was taken from the Professional Experience Record (completed by the school system) and the Personal History Blank for School Administrators (completed by the principal). Both forms were especially constructed for this study.

[3] National Education Association, Department of Elementary School Principals, The Elementary School Principalship, A Research Study. Thirty-Seventh Yearbook. Washington, D.C.: National Education Association, 1958. 114-115.

Table V-2 shows that there are appreciable differences in marital status for the two sexes. Whereas more than 90 percent of the men were married, approximately half the women were single. Other differences in this table are probably a result of differences in age.

Social background of the sample is indicated in a general way by Table V-3. No direct way of making comparisons with comparable age groups is available, but it is apparent that appreciably fewer of this group than of the population as a whole are from laboring and farming families, while more of the principals were the children of business and professional men.

The average years of schooling for fathers appears to be about the same as for the current American population of 25 or older.[4] However, since years of education is highly correlated (negatively) with age, the parents of this group are undoubtedly somewhat more highly educated than the average of their age group.

The differences between men and women are less striking in this table but may none the less be of significance. In interpreting these tables it is again necessary to keep in mind that age is negatively correlated with both occupational status and education. That is, the older the group the smaller the proportion of fathers who are

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[4] U. S. Department of Commerce, Bureau of Statistics, Statistical Abstract of the United States. Washington, D.C.: The Bureau, 1956. p. 111.

TABLE V-1. DISTRIBUTION OF AGES BY SEX OF THE 232 ELEMENTARY SCHOOL PRINCIPALS

		30 or younger	31-35	36-40	41-45	46-50	51-55	56-60	61 or older	No Infor-mation	Mean
Women	n	0	1	3	11	22	31	21	6	0	51.6
	%	0	1.1	3.2	11.6	23.2	32.6	22.1	6.3	0	
Men	n	3	25	22	32	27	12	13	0	3	42.2
	%	2.2	18.2	16.1	23.4	19.7	8.8	9.5	0	2.2	

TABLE V-2. MARITAL STATUS OF THE MEN AND WOMEN PRINCIPALS

		Single	Married	Widowed	Divorced or Separated	No Information
Women	n	49	32	10	4	0
	%	51.6	33.7	10.5	4.2	0
Men	n	6	128	0	2	1
	%	4.4	93.4	0	1.5	.7

professional, business, and clerical workers, and the larger the proportion of farmers and laborers. Similarly, the older the group the less formal education is to be expected. Since the men in this study are, on the average, almost a decade younger, we would expect that if men have been selected on the same basis as women, the average education of the fathers of men in the study would be somewhat higher. Similarly, more of them would have come from professional or business homes. In fact, however, the only differences that occur are in the opposite direction. Thus it appears that the social origins of the older women principals in this study are of somewhat higher status or that the men principals are now being drawn from lower socio-economic groups. Since attitudes and goals associated with education are often different for different social classes, in interpreting some of the findings of this study, particularly those in the area of concerns and values, this possible change over time in the social origins should be kept in mind.

Table V-4 shows that the principals in the sample differed widely in amount of formal training and in the amount and kind of experience on the job. More than 80 percent of the men principals held at least a master's degree as compared with 70 percent of the women. Appreciably fewer women than men have done graduate work--a reflection, no doubt, of the increased formalization of requirements since some of the older women achieved tenure. However, a larger proportion of women than men have done work beyond the master's degree. Two women and three men held doctorates.

In light of their higher mean age, it is to be expected that women would have had longer professional experience than men. The

TABLE V-3. SOCIAL ORIGINS OF THE 232 ELEMENTARY SCHOOL PRINCIPALS

a. Father's Occupation

		Professional	Business	Farm	Labor	No Information and Unclassified
Women	n	14	41	15	15	10
	%	14.7	43.2	15.8	15.8	10.5
Men	n	14	55	21	32	15
	%	10.2	40.1	15.3	23.4	10.9

b. Father's Education (highest grade attained)

		?-8	9-12	13-16	Above 16	No Information
Women	n	49	29	10	3	4
	%	51.6	30.5	10.5	3.2	4.2
Men	n	79	31	17	5	5
	%	57.7	22.6	12.4	3.6	3.6

TABLE V-4. FORMAL EDUCATIONAL QUALIFICATIONS OF THE ELEMENTARY SCHOOL PRINCIPALS

a. Education

		Some College	Bachelor's Degree	Work Toward Master's	Master's Degree	Work Beyond Master's	Doctor of Education Degree	Doctor of Philosophy Degree	No Information
Women	n	3	21	4	51	12	0	2	2
	%	3.2	22.1	4.2	53.7	12.6	0	2.1	2.1
Men	n	0	12	12	97	12	3	0	1
	%	0	8.8	8.8	70.8	8.8	2.2	0	.7

b. Professional Experience

		Years of Service as a Principal								No Information	Mean
		0-1	2-3	4-5	6-10	11-15	16-20	21-25	26-35		
Women	n	1	10	13	13	28	9	11	9	1	
	%	1.1	10.5	13.7	13.7	29.5	9.5	11.6	9.5	1.1	13.2
Men	n	9	17	22	3	25	16	5	4	--	
	%	6.6	12.4	16.1	28.5	18.2	11.7	3.6	2.9		9.5

TABLE V-4. FORMAL EDUCATIONAL QUALIFICATIONS OF THE ELEMENTARY SCHOOL PRINCIPALS (CONT'D)

		Kind of Teaching Experience				
		All Elementary	Elementary and Secondary	All Secondary	Other	No Information
Women	n	30	2	11	40	12
	%	31.6	2.1	11.6	42.1	12.6
Men	n	33	22	34	27	21
	%	24.1	16.1	24.8	19.7	15.3

lack of marked differences in length of administrative experiences (line 1 of Table V-4) probably indicates that women on the whole were promoted to a principalship only after longer experience as teachers or supervisors.

The Sample as Representative of the Contemporary Population of Elementary School Principals

Since the 232 subjects in this research were not selected randomly, there was no particular reason to expect that they would be representative of the population of elementary school principals in the 50 states. Nevertheless, it turns out that on the variables for which comparisons are available the research sample is remarkably representative. In Table V-5, the sex distribution, age, education, and experience of the sample is compared with similar data obtained from a recent representative sampling of the elementary principal population.5/

While it would be unsafe on the basis of this comparison to generalize that the research sample is in every way a representative sample of the population of elementary school principals, one can be reasonably sure that it is not markedly deviant. The comparisons in Table V-5 suggest that such findings as are presented in Chapter XI (relating amount of formal training to reputation and performance as a practicing principal) are not likely to be explained on the basis of the peculiar characteristics of the research sample.

5/ National Education Association, op. cit., p. 114-115.

TABLE V-5. A COMPARISON OF THE RESEARCH SAMPLE OF 232 ELEMENTARY SCHOOL PRINCIPALS WITH A RECENT NEA SURVEY SAMPLE OF 2000 PRINCIPALS

Category of Comparison	NEA Survey Sample		Research Sample	
	Women N=760	Men N=1240	Women N=95	Men N=137
1. Percent of Group	38%	62%	40.9	59.1
2. Age (Median)	52.1	43.7	50.9	42.5
3. Education:				
No degree	04%	none	3.2	none
B.S. only	23%	12%	26.3	17.5
Masters	71%	80%	53.7	70.8
More than Masters	02%	08%	14.7	10.9
No information	-	-	2.1	.7
4. Experience (Median)				
Total years in education	30.0	17.9	28.9	16.3
Total years as principal	10.3	8.4	12.7	7.7

Personal Characteristics of the Principals

In addition to the data presented in Tables V-1 through V-5 by means of which it was possible to describe the sample by relating it to the parent population, the sample can be described in another way. A rather extensive battery of tests measuring professional knowledge, abilities, temperament, and interests was given to each principal. The performance of the principals on these tests provides additional information about them.

It is the purpose of this section of the chapter to describe the measures obtained from this battery and, where data are available, to indicate how the research subjects compare with other groups on these measures. Since the data presented in the preceding section indicate that women and men principals in the sample may be drawn from rather different subgroups of the population, the data of this section are tabulated by sex. 6/

Administration of the Background Test

Prior to the experimental test week, a member of the research team visited each test center for the purpose of describing the research to the participants and administering the background tests. At a typical center, the local participants were brought together after the close of school one evening for a 60-90 minute description of the research, of the work they would be asked to do, and of the information that would be collected. At this meeting, the principals were given a packet of materials, including a biographical inventory, the Strong Vocational Interest Blank, the Symonds Educational Interest Inventory, and the 16 Personality Factor Inventory. These materials

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6/ Differences between the mean scores on each of 137 variables for men as compared with women were tested for significance; the results are tabulated in appendix D. Only those differences reaching the .05 level of confidence will be discussed here.

were to be completed at a later time and mailed to Educational Testing Service. On the following morning, a battery of basic mental ability tests was administered. In the afternoon two objective examinations, Administration and Supervision, and the National Teacher Examination optional test in Education in the Elementary School, were administered. Two NTE Common Examinations subtests, one of Science and Mathematics, and the other of Social Studies, Literature and Fine Arts, were administered during the evening of the second day of the test week.

Each of the tests employed will be briefly described, and a comparison of the performance of the men and women principals will be presented. Where suitable data are available, the performance of the principals will also be compared with that of other groups.

Measures of Professional and General Knowledge

Four tests were used as measures of professional and general knowledge. The professional knowledge of the principals was measured by School Administration and Supervision, Form FPE_1, a 90-minute, 7/ 110-item measure of knowledge of accepted administrative and supervisory principles and practices in education, and by Education in the Elementary School, Form K-ENT, an 80-minute, 120-item measure of knowledge of both substantive content and teaching methods. The Science and Mathematics (30 minutes, 55 items) and the Social Studies, Literature and Fine Arts (30 minutes, 65 items) subtests of the NTE Common Examinations, Form GNT, were used as measures of general knowledge. Data from these tests are presented in Table V-6.

7/ The standard time for this test is 80 minutes. On the advice of the Director of National Teacher Examinations, 90 minutes were allowed in this research in order to minimize the speed factor, which might particularly affect the older subjects.

TABLE V-6. PERFORMANCE OF THE PRINCIPALS ON TESTS OF PROFESSIONAL AND GENERAL KNOWLEDGE

Test	Men				Women				Total			
	Mean		S.D.		Mean		S.D.		Mean		S.D.	
	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score	Raw Score	Scaled Score
School Administration and Supervision	49.17	--	15.24	--	50.91	--	14.09	--	49.88	--	14.80	--
Education in the Elementary School	54.36	64	16.76	9	61.71	69	13.01	9	57.37	67	15.76	9
Science and Mathematics	20.15	64	8.65	10	14.81	57	6.82	8	17.97	61	8.37	10
Social Studies, Literature and Fine Arts	24.42	58	11.92	10	23.36	57	9.45	8	23.99	58	10.99	9

The means and standard deviations for the administration and supervision test are given only in raw score units. For the other three tests, scaled score units are also reported. The scaled score mean and standard deviation are 60 and 10 for the normative sample, which includes all teachers or prospective teachers to whom the tests were given in nationwide administrations of the National Teacher Examinations during 1954-1958. Comparable normative data are not available for the administration and supervision test; therefore scaled scores cannot be reported.

It will be noted from Table V-6, that the principals, particularly the women subjects, appear to have an appreciably better knowledge of the principles and practices of elementary education than do the group upon whose performance the norms were based--a group made up largely of college seniors preparing to teach. The men principals earned somewhat higher scores on the Science and Mathematics Test than the women. Both men and women did slightly less well on the Social Studies, Literature and Fine Arts Test, than did the norms group.

Measures of Professional Interest

These measures were obtained from the Educational Interest Inventory.[8] According to the Inventory authors, workers in the field of education have been found to be "clearly separated on the basis of interest...and the...scores derived from the test will indicate the strength of interest that an individual feels toward each of the professional positions and levels indicated." The Inventory

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[8] Symonds, Percival M. A Manual of Instruction for Educational Interest. New York Bureau of Publications, Teachers College, Columbia University (not dated).

TABLE V-7. PERFORMANCE OF THE PRINCIPALS ON SYMONDS *EDUCATIONAL INTEREST INVENTORY*

Score	Men		Women		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Elementary Principal	52.59	6.43	54.07	6.28	53.20	6.41
Supervisor	62.74	7.06	69.25	7.28	65.41	7.84
High School Principal	61.62	7.69	53.03	7.64	58.10	8.76
School Administrator	61.53	8.86	50.01	8.82	56.81	10.50
Elementary Teacher	54.18	9.34	65.35	12.11	58.75	11.91
High School Teacher	35.99	6.26	35.83	7.09	35.93	6.61
Professor	57.42	11.37	48.28	11.31	53.68	12.20

is untimed and contains 252 items. For each item the subject chooses from a pair of alternative responses the one that best describes him. Means and standard deviations are shown in Table V-7.

Comparative data that would aid in interpreting these scores are not available. Sex differences in these scores may be of interest, however. Men tend to score higher than women on the keys that reflect interest in the positions of higher status (Professor, School Administrator, and High School Principal). In contrast, the women score higher on keys that indicate concerns with actual teaching and its supervision (Elementary Teacher and Supervisor). However, this interpretation of these differences is not supported by scores obtained from the Strong Vocational Interest Blank (Table V-8). As will be shown, women principals tend to score higher on the Occupational Level key and the City School Superintendent key.

As the analyses of the study progressed, questions were raised concerning the value of the scores yielded by the Symonds Educational Interest Inventory and it was finally decided to eliminate them from further consideration.

Measures of Vocational Interests

The Strong Vocational Interest Blank for Men was completed by all subjects. This widely used test provides for each of more than 30 occupations "a measure of how nearly the person's interests coincide with those of the *average* person successfully engaged in the occupation." 9/ The extent of this coincidence is indicated by letter ratings (A, B+, B, B-, C+, C) which are set so that an A rating means that the individual has the interests of the person successfully engaged in the occupation;

9/ Strong, Edward K., Jr. *Manual for Strong Vocational Interest Blank for Men*. Stanford, Calif.: Stanford University Press, 1951, p. 10.

a C rating means that the person does not have such interests. Approximately 70 percent of the people successfully engaged in an occupation receive an A rating for that occupation; an additional 13 percent score in the B+ range, 9 percent in the B range, and 5 percent in the B- range. Only 3 percent fall below this point. Ratings of C and C+ thus indicate little similarity to the criterion group with respect to interests.

Eighteen scores that were used in this study are shown in Table V-8. This table also shows the means and standard deviations of the 18 scores by sex and the percent of principals who obtained A scores for each vocation.

As might be expected, the principals most nearly resemble those occupational groups whose work involves working with people, usually in a social service setting. The interests of the group, as a whole, seem to be least like those of engineers and purchasing agents.

Measures of Basic Mental Abilities

Research in psychology has, in the past two decades, identified a number of ability factors in terms of which individual differences can be described. Some of these, including the verbal and reasoning factors, are widely known and have been shown to be related to performance in a wide variety of situations. Measures for 13 of these factors were included in this study. Except for the test of verbal knowledge, all tests in this battery were given under speeded conditions.

The specific abilities for which measures were obtained are

TABLE V-8. PERFORMANCE OF THE PRINCIPALS ON THE STRONG VOCATIONAL INTEREST BLANK 10/

Occupation	Men			Women			Total		
	Mean	S.D.	%A of	Mean	S.D.	%A of	Mean	S.D.	%A
Psychologist	332.99	49.82	09	339.87	51.91	11	335.81	50.80	10
Physician	278.96	38.48	02	288.25	36.74	05	282.76	38.05	03
Engineer	295.39	49.40	02	265.23	38.83	00	283.04	47.73	01
Production Manager	317.50	28.45	16	284.71	23.01	02	304.07	30.90	10
Math-Science Teacher	347.66	51.14	31	314.60	48.61	12	334.12	52.69	23
Policeman	319.37	49.95	10	263.72	47.65	02	296.58	56.14	07
Personnel Manager	348.79	34.61	47	331.60	33.40	21	341.75	35.15	37
Public Administration	356.92	28.45	63	339.32	30.78	40	349.71	30.67	53
Social Science Teacher	367.42	46.70	49	365.93	42.27	48	366.81	44.94	49
City School Supt.	379.33	35.23	31	390.24	32.82	36	383.80	34.68	33
Minister	355.96	63.81	17	394.20	57.27	32	371.62	64.04	23
Accountant	316.89	30.46	15	309.48	28.44	08	313.86	29.87	12
Purchasing Agent	301.85	20.92	02	290.00	19.34	00	297.00	21.11	01
Sales Manager	310.15	33.90	09	306.97	27.82	05	308.85	31.59	08
Lawyer	304.31	42.15	07	312.74	36.47	11	307.77	40.14	08
President Mfg. Concern	297.68	23.49	03	300.41	21.43	03	298.80	22.71	03
Masculinity-Femininity	310.20	76.53	-	177.37	107.20	-	255.81	111.49	-
Occupational Level	357.78	45.59	-	374.65	43.97	-	364.69	45.80	-

10/ To eliminate negative signs, 300 has been added to the score for each scale.

described below. 11/

1. *Deduction* (D-2) 12/is the ability to reason from given facts to their necessary conclusions. The test used was entitled simply Reasoning. This factor seems to be involved in the process of understanding specific materials (e.g., reading) "by relating it (the problem) to general principles about things and situations which have been accumulated as a result of past experience." 13/

Item type: Read the *Given Facts* below and fill in the blanks in *Conclusion*

Given Facts		*Conclusion*
M is younger than N K is older than N	therefore	K is *older* than M.

The test contained 30 such items to be completed in six minutes.

2. *Induction* (I-1) is the ability to discover a general concept that will fit a set of data. The test used was entitled Letter Grouping.

Item type: In each row three of the groups of letters are alike in some way. Mark the one that is different.

AABA	ACAD	ACFH	AACC
☐	☐	☒	☐

The test contains 30 rows of letter groups to be done in three minutes.

11/ Nine of these factors are described in a monograph by John French, "The Description of Aptitude and Achievement Factors in Terms of Related Factors," *Psychometric Monograph* No. 5. Chicago: University of Chicago Press, 1951. The tests for these nine factors are taken from the *Kit of Selected Tests for Reference Aptitude and Achievement Factors*, assembled by French in 1954. The four fluency factors are described in Guilford, J.P. "Creative Abilities in the Arts," *Psychol. Rev.*, 1957, *64*, 110-118. The fluency tests were obtained from the Sheridan Supply Company, Beverly Hills, California.

12/ The notation in parenthesis following the factor name is the *Kit* code number for the test used.

13/ French, *op*. *cit*. 206.

3. General reasoning (R-1) is the ability to carry out the kind of reasoning required in the solution of mathematics problems. The test used bore the title Mathematics Aptitude Test. This test measures the well-known quantitative factor in academic aptitude tests. Item type: How many pencils can you buy for 50 cents at the rate of 2 for 5 cents?

(a) 10 [✓ (b)] 20 (c) 25 (d) 100 (3) 125

The test consists of 20 items with a time limit of 10 minutes.

4. Verbal knowledge (V-4) is general knowledge and understanding of language. The test used was entitled Advanced Vocabulary. Item type: Select the closest synonym and circle the number in front of it.

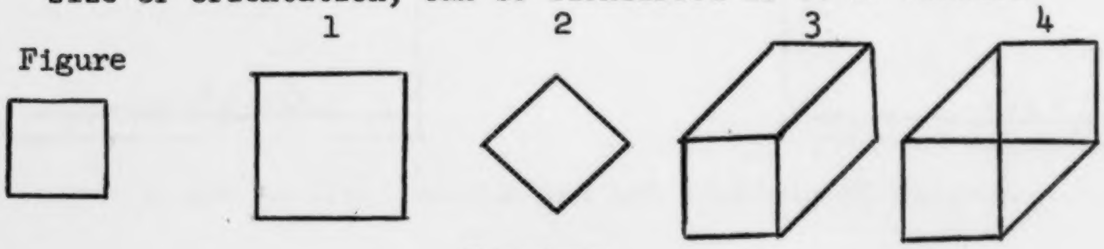
jovial

1. refreshing
2. scarce
3. thickest
4. wise

[✓ 5.] jolly

The test contained 36 items, covering a wide range of vocabulary, on which the principal had seven minutes to work.

5. Flexibility of closure (Cf-1) is the ability to keep in mind a definite configuration and to identify it in spite of perceptual distractions. The test used was entitled Concealed Figures. Item type: A figure is presented along with four more complex drawings. Each complex drawing in which the figure, unchanged as to size or orientation, can be identified is to be checked.



Drawings

The test contains 49 sets of figures and drawings and was given with a time limit of 10 minutes.

6. Speed of closure (Cs-1; Cs-3) is the ability to unify an apparently disparate perceptual field into a single percept. (In tests of this factor, the subject does not know what it is he is looking for, while in the flexibility of closure test he does.) Two tests were used; one was entitled Four Letter Words and the other Gestalt Completion Test. The test "Four Letter Words" was administered as the second test in the battery.

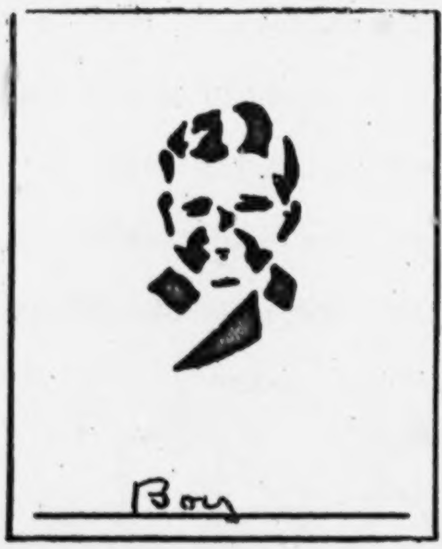
Item type: Draw a circle around each four-letter word in the rows below.

P R O H A M G E W I N D E Y E K Z C I R O C K W Q E H O Y R S A J P I N K

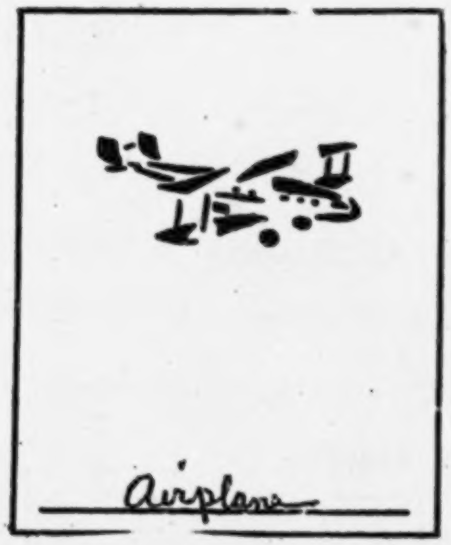
The test contained 1012 letters arranged in 22 rows of 46 letters each. The time limit was two and one-half minutes.

The second test of speed of closure, the Gestalt Completion Test, was the final test in the battery.

Item type: Identify the pictures. Return later to those you find difficult. Write your answer on the lines.



Boy



airplane

The test contained 24 pictures and had a time limit of two minutes.

7. Associational fluency is the rate at which words of similar meaning or fitting a common set of rather narrowly defined specifications can be called forth. The test was Associational Fluency 1 (Form A). 14/ The test consists of four simple words, each word being followed by 20 spaces in which to write similar words. The time limit was four minutes.

Item type: Write words similar in meaning to the word SOFT.

SOFT ____________ ____________

____________ ____________

____________ ____________

____________ ____________

8. Expressional fluency is the ability to produce continuous discourse under conditions which restrict the permissible topics or usages. Tests of this factor seem primarily to involve the ability to put ideas into words rather than the discovery of ideas. The test used was entitled Expressional Fluency (Form A). 15/

Item type: In this test you are to write sentences each made up of four words. Each word must begin with the letter indicated.

P arents u nderstand y our i deas

P raise u ncles y oung i nsights

The test consists of four parts, each with spaces for the construction of up to 16 sentences. The time limit was eight minutes.

14/ Developed by Paul R. Christensen and J. P. Guilford and published by the Sheridan Supply Company, Beverly Hills, California.

15/ Ibid.

9. Ideational fluency measures the rate at which a succession of ideas meeting certain meaningful requirements can be produced. Quality of ideas is not important. The test used was Ideational Fluency 1 (Form A).16/

Item type: Name SOLIDS that will BURN

coal	magnesium
wood	

The test consists of four parts each with space for 28 names. The time allowed was 12 minutes.

10. Word fluency is the rate at which words meeting definite structural requirements can be produced. The test employed was entitled Word Fluency (Form A).17/

Item type: Write words containing the letter J

jump	judge
jury	
jug	

The test consists of two parts each defined with a different letter followed by spaces for up to 48 words. The time available was four minutes.

11. Associative memory (Ma-1; Ma-3) is the ability to remember arbitrarily established relationships between items or objects. Two tests were used, First Names and Picture Numbers.

In the First Names test a list of 20 first and last names (e.g., Sammy Banks) is presented to be learned. The subject then turns the

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16/ Ibid.

17/ Ibid.

page and is required to supply the first name for a reordered list of the last names. In the Picture Number test the same format is followed but numbers given to 21 simple objects must be recalled. The time limit for the first test was eight minutes, five to learn the names and three to recall them. The time for the second test was six minutes, divided into three minutes for study and three for recalling the items.

12. Number facility (N3,N1) is the facility with which numbers, or perhaps other well-practiced materials, can be handled when the subject is thoroughly familiar with the rules governing their use. Two tests were used for this factor: The Subtraction and Multiplication Test and the Addition Test.

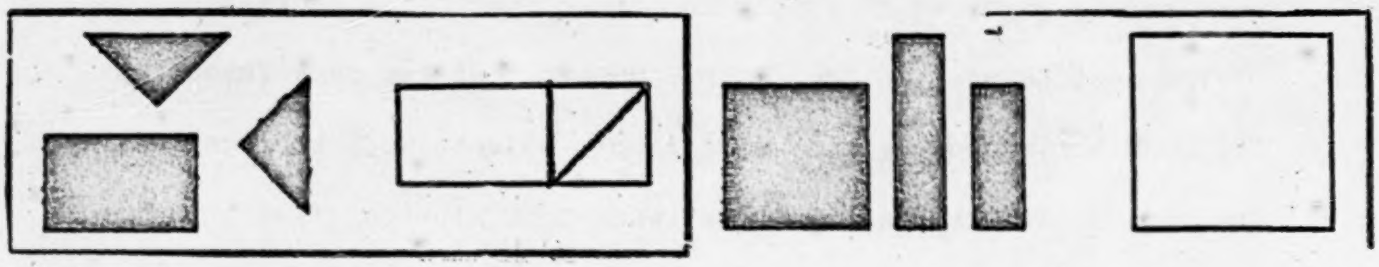
Item type:

Addition Test			Subtraction and Multiplication Test			
4	7	12	60	40	56	47
9	6	5	-32	-19	x4	x8
1	15	67	$\boxed{28}$	☐	$\boxed{224}$	☐
$\boxed{14}$	☐	☐				

The Addition Test contained 90 three-figure examples with a time limit of three minutes. The Subtraction and Multiplication Test contained five rows (10 examples each) of subtraction items alternated with five rows of multiplication. The time limit was again three minutes.

13. Visualization (V2-1) is the ability to manipulate mentally visual images, to comprehend rearrangement of figures in two-dimensional space. The Paper Form Board was used.

Item type: Draw pencil lines in the white outline to show how the black pieces can be placed to fit the outline.



The test contains 42 problems to be done in seven minutes.

The means and standard deviations for men and women principals on each of these tests are given in Table V-9.

Meaningful normative data for these tests obtained from comparable groups under similar conditions are not available. It is possible, however, to note differences between the men and women principals who participated in the study. Women principals tended to earn higher scores than men on the tests of number facility and verbal knowledge. Men, on the other hand, did somewhat better on tests of reasoning, flexibility of closure, and visualization. These differences may be attributed in part to the fact that the men tended to be younger than the women principals. The differences appear to be important in interpreting several of the findings of the study where differences between men and women are noted in their performance of administrative tasks. In later chapters of this report, as will be seen, the patterns of relationship between many of the tests and other variables can be understood by references to previous research in which tests measuring the same basic factors were employed.

Measures of Basic Personality Factors

Forms A and B of the 16 Personality Factor Test [18] were given.

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[18] Cattell, Raymond B., Saunders, David R., and Stice, Glen F. Handbook for the Sixteen Personality Factor Questionnaire. Champaign, Ill.: Institute for Personality and Ability Testing, 1959.

TABLE V-9. PERFORMANCE OF THE PRINCIPALS ON THE BASIC MENTAL ABILITY TESTS

Factor	Test	Men		Women		Total	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Deduction	D-2 Reasoning	22.38	6.92	18.85	5.58	20.94	6.64
Induction	I-1 Letter Grouping	11.49	4.18	11.24	2.94	11.39	3.73
General Reasoning	R-1 Mathematic Aptitude	10.13	3.78	8.80	3.17	9.59	3.60
Verbal Knowledge	V-4 Advance Vocabulary	21.32	7.54	24.05	6.84	22.44	7.39
Flexibility of Closure	Cf-1 Concealed Figures	57.33	26.19	47.97	21.25	53.50	24.72
Speed of Closure	Cs-1 Gestalt Completion Test	11.63	4.30	10.57	3.58	11.19	4.05
	Cs-3 Four Letter Words	21.80	6.68	22.93	5.22	22.26	6.15
Associational Fluency		13.64	5.25	14.40	3.71	13.95	4.70
Expressional Fluency		8.16	3.52	8.60	3.06	8.34	3.35
Ideational Fluency		52.73	13.35	56.03	13.09	54.08	13.34
Word Fluency		41.43	9.86	43.22	9.54	42.16	9.77
Associative Memory	Ma-1 Picture Numbers	10.43	4.50	10.88	4.19	10.62	4.38
	Ma-3 First Names	7.65	4.35	6.93	4.80	7.35	4.55
Number Facility	N-1 Addition	39.04	11.60	43.93	10.42	41.04	11.38
	N-3 Subtraction & Multiplication	48.42	15.19	56.33	14.81	51.66	15.53
Visualization	Zz-1 Paper Form Board	13.66	5.39	11.63	4.45	12.83	5.12

Fifteen of the 16 scores were obtained. Factor B, a short measure of "general intelligence," was not used in this study, since this is presumably what is measured by the common variance in the pure factor tests. The 15 scores are described below.

Factor A: Friendly vs. Aloof[19]

The friendly end of this measure seems best characterized by an interest in people and a good-natured, accepting attitude, in contrast to the aloof end which is characterized by an uneasy concern about interpersonal behavior and a cool, critical, somewhat rigid attitude.[20]

Factor C: Emotional Stability vs. Lack of Frustration Tolerance

The behavior of the emotionally stable person is characterized by a high degree of integration and frustration tolerance; such a person has the capacity to postpone gratification without experiencing annoyance or irritability. In contrast, the person low on this dimension, lacking frustration tolerance, is prone to feel and show irritation and to respond to momentary impulses without sufficient regard for long-term objectives or for incidental, but not necessarily trivial, consequences. A lack of emotional stability may not always be apparent in actual behavior, since an individual may, through Character Strength (Factor G) or

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[19] In this section the letters correspond to those used by the test authors. The verbal titles, however, have been adapted with special regard to the purposes of this report.

[20] This and the following descriptions are meant to indicate the extremes of a particular spectrum of social behavior. The conceptualized dimensions underlying these traits are continuous, and most people are best described in terms of the degree, or relative predominance, of one or the other aspects of the continuum in their behavior.

Character Stability (Factor Q_3) consciously repress or redirect non-integrative impulses. The combination of a low score on emotional stability and a high score on character strength may be predisposing to various manifestations of anxiety and neuroticism (measured by factors O and Q_4). The emotionally stable person is typically rated by peers as "mature," "calm," and "realistic," while the person on the other end of the continuum is more often rated as "changeable," "evasive," "worrying."

Factor E: Dominance vs. Submission

Persons scoring high in this factor are perceived as assertive and self-assured, independent, stern, and to some extent unconventional and attention-getting. Persons scoring at the opposite pole are dependent, kindly, expressive, and conventional.

Factor F: Enthusiastic vs. Sober

The enthusiastic or "surgent" person is perceived as talkative, cheerful, placid, frank, impulsively kind, expressive, alert, and fond of large gatherings, in contrast to the sober or desurgent person who is regarded as quiet, introspective, languid, and conscientious. The enthusiastic is quick to see the "common-sense" answer; the sober more inclined to see the subtle and tenuous implications.

Factor G: Character Strength vs. Lack of Conventional Standards

The person scoring high on Character Strength is rated as persevering, responsible, and conscientious. This factor probably represents the variance in the extent to which people regulate or find satisfaction in regulating their expression of interest and emotion to accord with their implicit understanding of what is moral, or what is approved by the community.

Factor H: Adventurous vs. Shy

The adventurous person, as opposed to the shy is more impulsive and less concerned in responding to his general environment. He is perceived as gregarious, bold, and frivolous, and as showing strong sentimental interests.

Factor I: Emotionally Sensitive vs. Tough Practical

This factor seems to approximate the tender- and tough-minded categorization described by William James. The emotionally sensitive person is perceived as demanding and dependent, imaginative, kindly, gentle, and aesthetically fastidious. In contrast, the tough, practical person is more often seen to behave in an emotionally mature, independent, smug, cynical, and responsible (as contrasted with frivolous) manner.

Factor L: Suspicious vs. Trusting

Individuals scoring high on this factor tend to be seen as prone to jealousy, to be bashful, suspicious, dour, and hard. Those scoring low are more likely to be described as free of jealous tendencies, composed, trustful, adaptable, and concerned about other people.

Factor M: Disregard for Conventions vs. Practical Concernedness

The individual scoring high on this factor unconcernedly goes his own way in his community, is emotionally egocentric, and does not feel much responsibility in practical matters. At the opposite pole, the individual scoring low is concerned about the practical and is anxious to do the proper thing. The high scoring person is typically rated as unconventional, sensitive, imaginative, placid, undependable; he shows occasional hysterical emotionality. In contrast, the low scoring person is more likely to be seen as conventional, logical, conscientious, and concerned about conventional values.

Factor N: Sophistication vs. Rough Simplicity

This factor seems to reflect the extent to which a person characteristically takes a sophisticated, intellectual, and unsentimental approach to things. People scoring high are described as polished, cool, aloof, and fastidious, while those scoring low are better described as clumsy, easily pleased, and attentive to people.

Factor O: Anxious Insecurity vs. Placid Self-Confidence

The behavior continuum described by this factor is best indicated by the dichotomies anxious vs. placid and worrying vs. tough, calm. The underlying individual difference is probably one of concern with one's ability to cope with the environment. People scoring high often report that they do not feel accepted and free to participate in social groups, and they are often perceived as ineffective speakers.

Factor Q_1: Radicalism vs. Conservatism

This seems to be a measure of the extent to which one customarily reserves the right to question and to reach his own conclusions, on the one hand, and, on the other, accepts institutions and values as he perceives them to be interpreted by society.

Factor Q_2: Independent Self-Sufficiency vs. Lack of Resolution

The self-sufficient individual is accustomed to going his own way, apparently feeling little need for support by others. High-level business executives, natural scientists, and convicted criminals seem to score very high on this factor. At the opposite pole, the individual seems to receive a positive satisfaction from participation in a social environment.

Factor Q_3: Will Control and Character Stability

Individuals scoring high on this trait seem to orient their behavior in terms of their general system of values. Since their values may not be shared by associates, or since they may be in conflict with short-term group goals, high scoring individuals are often seen as stubborn and obstinate, though at the same time considerate and conscientious. The behavior associated with low scores on the previous factor and on this factor are in many ways similar. In the former case, however, the behavior results from a desire to maintain a satisfactory interpersonal environment, and in the latter a lack of concern with the effect of behavior on more long-term objectives. At the opposite pole, the behavior associated with people scoring high on Will Control often resembles that found for persons who score high on Character Strength (G); however, high Character Strength seems to involve the intuitive use of social norms learned in childhood, while high Will Control probably reflects the use of the individual's own more or less rationally and consciously reasoned criteria and objectives.

Factor Q_4: Nervous Tension

The person scoring high on this factor is apparently tense, restless, and fretful. The factor is probably a measure of anxiety arising from imperfectly suppressed drives; there is some indication of a correlation with sexual deprivation.

The mean and standard deviations of the scores of the men and women principals on each of these 15 basic personality factors are given in Table V-10, with comparable statistics for a group consisting of 156 college students.

From the results shown in Table V-10, the principals in this

TABLE V-10. PERFORMANCE OF THE PRINCIPALS ON THE BASIC PERSONALITY FACTORS, TOGETHER WITH DATA FOR A COMPARISON GROUP 21/

Factor	Men		Women		Total		Comparison Group	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
A Friendly vs. Aloof	20.56	5.69	21.64	4.57	21.00	5.29	19.0	6.4
C Emotional Stability vs. Lack of Frustration Tolerance	32.43	4.95	31.85	5.45	32.19	5.17	32.2	6.0
E Dominance vs. Submission	24.01	5.22	21.03	5.53	22.79	5.54	23.1	6.2
F Enthusiastic vs. Sober	22.46	6.16	20.93	6.22	21.83	6.23	28.4	6.7
G Character Strength vs. Lack of Conventional Standards	25.33	4.65	25.01	5.13	25.20	4.86	24.5	4.6
H Adventurous vs. Shy	29.12	8.77	26.80	8.54	28.17	8.75	24.0	9.6
I Emotionally Sensitive vs. Tough Practicality	21.53	4.20	24.86	3.45	22.90	4.24	23.7	5.2
L Suspicious vs. Trusting	14.12	5.02	12.38	4.96	13.37	5.08	16.1	4.9

21/ The comparison group is the one reported in Raymond B. Cattell, David R. Saunders, and Glen F. Stice, Handbook for the Sixteen Personality Factor Questionnaire. Champaign, Ill.: Institute for Personality and Ability Testing, 1957 (Tabular Supplement. pp. 12-13). It consists of 156 American college students (men and women) of average age 21 and ranging from 17 to 30. Although somewhat younger, these college students probably more closely resemble the principals of this study than would a random sample of persons in the adult population.

TABLE V-10. PERFORMANCE OF THE PRINCIPALS ON THE BASIC PERSONALITY FACTORS, TOGETHER WITH DATA FOR A COMPARISON GROUP (CONT'D.)

Factor	Men		Women		Total		Comparison Group	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
M Disregard for Conventions vs. Practical Concernedness	20.26	4.41	23.59	4.75	21.62	4.83	22.8	5.5
N Sophistication vs. Rough Simplicity	23.04	4.17	20.72	3.90	22.09	4.22	20.2	4.0
O Anxious Insecurity vs. Placid Self-Confidence	18.74	5.87	19.11	5.82	18.89	5.86	22.1	6.5
Q_1 Radicalism vs. Conservatism	20.45	4.35	19.83	3.89	20.20	4.18	18.5	4.3
Q_2 Independent Self-Sufficiency vs. Lack of Resolution	17.49	4.95	16.94	4.69	17.26	4.85	19.0	4.9
Q_3 Will Control and Character Stability	22.73	4.75	22.68	4.72	22.71	4.74	19.8	4.6
Q_4 Nervous Tension	22.35	7.23	21.28	7.87	21.91	7.52	26.	7.

study appear to be differentiated from the comparison group primarily in terms of factors F, H, L, O, Q_3 and Q_4. In contrast with the comparison group, which may be considered to be approximately a sample of the American college undergraduate population, the principals as a group appear to be:

1. More inclined to be concerned with the subtle and long term, and less quick to off-hand acceptance of the matter-of-fact and common-sense solution. They may also be expected to be more conscientious and less fond of excitement for its own sake. (Factor F. Enthusiastic vs. Sober)

2. Less likely to take a "life is serious" attitude, or find human contacts exhausting and to adopt a shy, aloof, or withdrawing attitude. (Factor H. Adventurous vs. Shy)

3. More trusting and adaptable, less critical, less skeptical, and in general somewhat less tense and more relaxed in their approach to the social environment. (Factor L. Suspicious vs. Trusting)

4. Somewhat more secure or confident in their handling of environmental problems. (Factor O. Anxious Insecurity vs. Placid Self-Confidence)

5. More persistent and concerned with acting in accordance with a system of values. (Factor Q_3. Will Control and Character Stability)

6. Less tense, more calm and self assured. (Factor Q_4. Nervous Tension)

In general, these are the differences known from other studies 22/ to be characteristic of occupational groups in which normal professional

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22/ Cattell et al. *op. cit.*

activity calls for a great deal of social interaction and direction or supervision of work by others. The general picture apparently is of a group that, in comparison to other groups of similar status and education, is somewhat more extroverted; more willing to make decisions and commitments, and less anxious about them (O and Q_4); more purposeful (Q_3); more level headed (F); and less concerned with possible hidden motives (L).

Turning to sex differences within the sample of principals, women appear to be somewhat more Emotionally Sensitive (I) and more willing to Disregard Conventions (M) than men. They are less Dominant (E), less Suspicious (L), less Sophisticated or Shrewd (N), and less Adventurous (H). Except that college educated women tend to be more Adventurous, these are the characteristic sex differences usually found with the Sixteen Personality Factors Questionnaire. 23/ The differences do suggest, however, a somewhat atypical orientation among men principals. In comparison with women principals the men tend to be more realistic and practical, but less conscious of human values; they may characteristically be more assertive, more ambitious, less gullible, and less tolerant of human weakness.

Summary

In this chapter the 232 principals who were the subjects of the study were described as a group. It has been shown that these principals are a reasonably representative sample of full-time elementary school principals. The sample contained more men than

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23/ Cattell et al., op. cit.

women, and in about the same proportions as in the national population. Differences between men and women principals involve experience, interests and abilities. These differences will be important to understanding how the principals performed administrative tasks, as described in subsequent chapters.

CHAPTER VI

SCORING THE IN-BASKETS

At the conclusion of the test week, each participant in his work on the in-basket items had produced a large number of handwritten documents, such as letters, memoranda, agenda, calendars, and reminders to himself. This material constituted the record of his behavior in response to a standard set of administrative items. The next task was to reduce all of this material to a set of measures based on a conceptual scheme which would adequately represent the important aspects of the principals' administrative behavior. This required the development and application of scoring procedures.

Approaches to Scoring

Aside from merely asking judges to make global judgments, there are two contrasting ways by which such a record of behavior can be approached. One way has to do with the content of the behavior, or what is done, and the other with the style of the behavior, or how it is done. Content refers to the substance of the behavior, the courses of action taken; for example, the principal called a meeting, refused a teacher's request, followed the course of action recommended by a teacher, planned to discuss a problem with a parent, or notified the superintendent's office of the illness of a teacher. Style refers to attributes of the behavior; thus a particular course of action (such as following a recommendation made by a teacher) could be done courteously or with formality; it could be done in writing, by telephone, or in face-to-face conversation; it could be done in a few words or in many. Content and style are not independent ways of looking at behavior. It is unlikely that the act of praising a teacher would be done discourteously. Nevertheless, content and style constitute ways of looking at behavior which are sufficiently different to justify using both approaches in developing a method for scoring the records of in-basket behavior. This chapter is mainly concerned with a description of the methods which were developed for scoring the style of the principals' behavior.

Scoring for Stylistic Categories of Behavior

Scoring for stylistic aspects of behavior has to do with how the behavior was performed rather than with what was done. Stylistic scoring thus represents a different type of abstraction of the behavior than does content scoring.

The first question which had to be faced in developing the scoring system was "What are the stylistic attributes of behavior which should be included in the system?" Two approaches were followed in obtaining these categories--one theoretical and one empirical.

The theoretical approach involved the development of scoring categories, each referring to a different attribute of style, which were suggested by current theories about leadership and administrative behavior. For example, Hemphill[1] has proposed a theory of leadership and group problem solving which involves the concepts of initiation of structure and consideration. These concepts resulted in such scoring categories as Follows a Pre-Established Structure, Initiates a New Structure, Courtesy to Subordinates, and Informality to Subordinates.

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[1] Hemphill, John K. "Administration as Problem Solving." Administrative Theory in Education. (Edited by A. W. Halpin.) Chicago, Ill.: Midwest Administration Center, 1958, pp. 89-118.

Griffiths'2/ theoretical work on administration involves the key concept of decision-making. His work resulted in such scoring categories as Sets a Deadline, Follow-Up or Feedback Planned, Contingent Decision, and Arrives at a Procedure for Deciding.

The empirical approach involved, first of all, asking various judges to examine sets of in-basket responses and to write down brief descriptions of ways in which they saw variation in how the problems were handled. This procedure resulted in the collection of several hundred cards, each card containing a statement of some kind of difference observed in how principals worked on the in-basket problems. The cards contained phrases such as "overly critical of the work of others," "compulsive," "seeks temporary solutions," "postpones decision," "neat," "credulous -- accepts statement without checking," "makes unwarranted assumptions," "authoritarian attitude," and "suspicious of the motives of others."

The cards were then examined in an attempt to find a smaller number of concepts which would include as many of the statements as possible. The cards were sorted into categories each of which contained statements thought to be more or less synonymous with regard to some stylistic attribute of behavior. The categories were further refined by using them in scoring a preliminary sample of in-basket responses. Categories of behavior which rarely occurred were eliminated or combined with others. Definitions of the categories were rewritten to make them as unambiguous as possible preserving distinctions which seemed important to the investigators. After a

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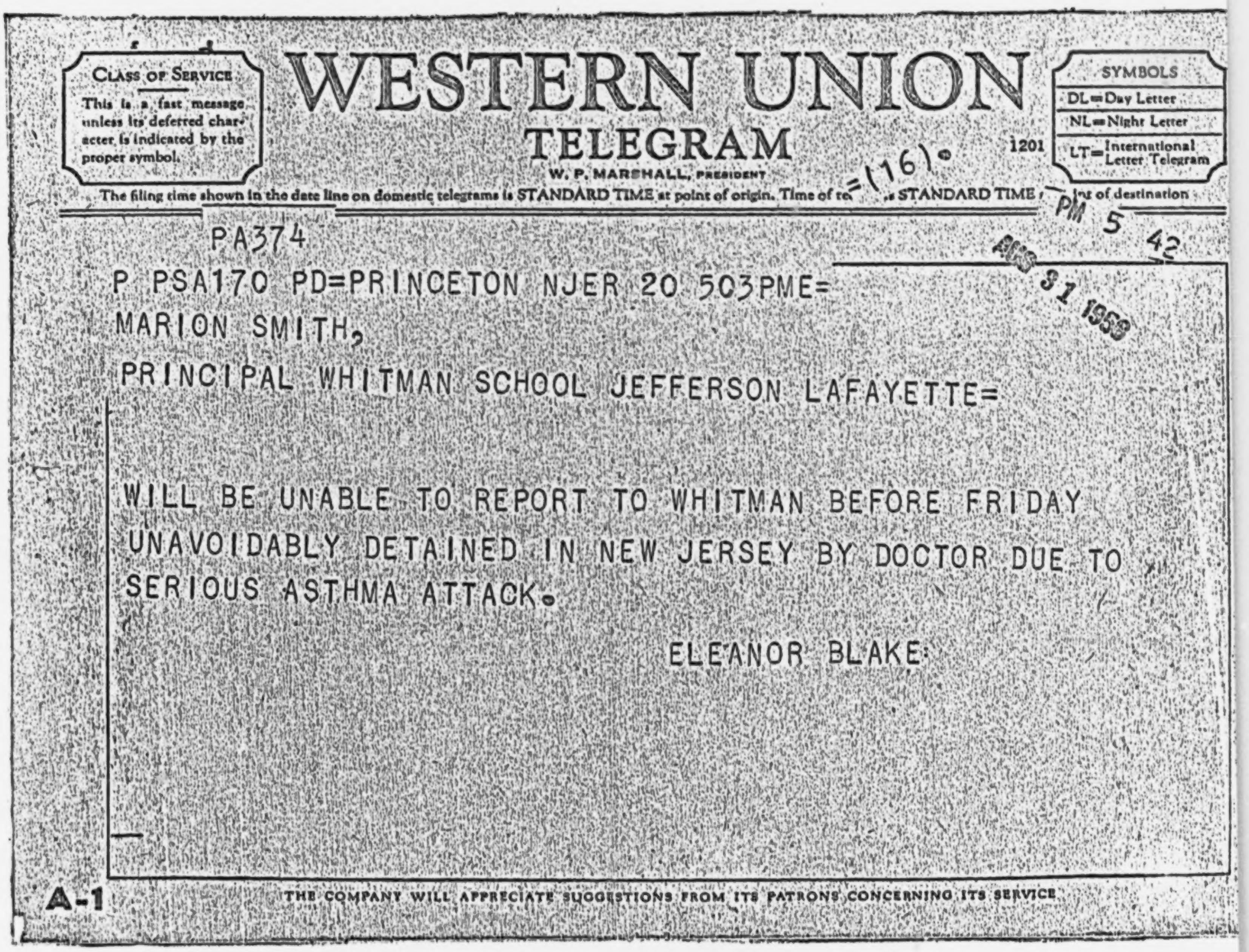
2/ Griffiths, Daniel E. Administrative Theory. New York: Appleton-Century-Crofts, 1959.

good many hours of tryout and discussion of categories suggested by both the theoretical and empirical approaches, a list of 68 categories was finally selected for use in the study. The nature of these categories will be described in a later section.

A Score Sheet was designed which contains cells formed by rows, representing in-basket items, and columns, representing scoring categories. The scorer, after studying the examinee's response to an item, scanned the scoring category headings and recorded a 1 or 0 in each cell of the row to indicate whether or not the behavior described by the scoring category occurred in the response to that item. The second item was scored by moving across the next row, and so on. The score for a particular scoring category was the number of 1's recorded in the corresponding column. Since there were 132 items in all four in-baskets, the maximum possible score for most categories was 132. In certain categories, such as Number of Subordinates Involved Individually, the entry in each cell is a frequency which may be greater than 1; in such categories the maximum possible score is, of course, greater than 132.

Scoring for Content Categories of Behavior

The content of a principal's response to an in-basket item may be thought of in terms of the courses of action he takes in handling the problem. For each in-basket problem, the major courses of action actually taken by principals in the test situation were identified.



CLASS OF SERVICE
This is a fast message unless its deferred character is indicated by the proper symbol.

WESTERN UNION
TELEGRAM
W. P. MARSHALL, PRESIDENT

1201

SYMBOLS
DL=Day Letter
NL=Night Letter
LT=International Letter Telegram

The filing time shown in the date line on domestic telegrams is STANDARD TIME at point of origin. Time of re[illegible] STANDARD TIME [illegible] of destination

=(16)

PM 5 42
AUG 31 1959

PA374
P PSA170 PD=PRINCETON NJER 20 503PME=
MARION SMITH,
PRINCIPAL WHITMAN SCHOOL JEFFERSON LAFAYETTE=

WILL BE UNABLE TO REPORT TO WHITMAN BEFORE FRIDAY UNAVOIDABLY DETAINED IN NEW JERSEY BY DOCTOR DUE TO SERIOUS ASTHMA ATTACK.

ELEANOR BLAKE

A-1

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Figure VI-1. An Item From the First In-basket

What a course of action is can best be illustrated with an actual item.

The topmost item on the first in-basket encountered by each principal is shown in Figure VI-1. It is a telegram from a teacher, Miss Blake, stating that she is ill and will be unable to report for work when school opens. Here are ten courses of action one or more of which were taken by some principals in response to this item:

A. Communicate with superintendent's office.

B. Personally initiate procedure for obtaining substitute (without involving superintendent's office).

C. Use (or consider using) Miss Ash as substitute.

D. Provide for instructions and/or help for substitute.

E. Have substitute attend faculty meeting.

F. Convey condolence to Miss Blake.

G. Send Blake (or have sent to Blake) card and/or flowers, and/or gift, etc.

H. Call Blake's attention to regulations regarding absence.

I. Have records show Blake absent from Tuesday faculty meeting.

J. Refer to secretary.

Courses of action such as these were obtained for every item in each in-basket. The number of courses of action for any one item was arbitrarily limited to ten. Most items required between five and ten courses of action to include most of the actions taken. The total number of courses of action identified averaged 210 for each of the Whitman School In-Baskets and was 304 for the Bureau of Business In-Basket.

How were these lists of courses of action developed? The procedures for identifying courses of action for the school in-baskets began by the assembling of committees of elementary school principals, who working with staff members, formulated all the courses of action which they could reasonably expect principals to carry out for each item. The lists so obtained were then revised after a preliminary attempt to apply them to responses actually made in a sample of in-basket responses. Courses of action were added, deleted, combined, or otherwise edited until they seemed reasonably adequate for describing the content of the behavior of the principals.

In the case of the Bureau of Business In-Basket, the lists were made up without the benefit of committees, solely on the basis of analysis by staff members of the content of responses. The lists so obtained were similarly tried out and revised until they seemed to provide a satisfactory basis for classifying responses. This latter procedure, while more time-consuming, probably resulted in lists which corresponded somewhat more closely to the behavior of the examinees.

Ten columns of the Score Sheet (labelled A to J) were reserved for recording courses of action. The scorer entered a 1 or 0 in each cell, the 1 indicating that the course of action designated by the column heading (e.g., send flowers) was carried out in response to the item corresponding to the row. Since more than one course of action can be carried out for a particular item, any number of the cells in a row may be scored 1. Thus for the item concerning Miss Blake, a principal might both notify the superintendent's office and send flowers; 1's would then be recorded in Column A and Column G.

It is obviously not appropriate to get totals by columns, since the meanings of the 1's in any column vary from item to item; but the total over all columns is meaningful. One scoring category was derived by simply totaling all the Usual Courses of Action taken by a principal. The meaning of this scoring category will become clearer in the light of the findings to be reported later; but it seems evident that people who take many courses of action are productive and tend to see a variety of implications in the items.

Different systems for scoring the content of courses of action can be devised if they are perceived of as being classifiable in various ways. One system that was considered for classifying the courses of action was in terms of their appropriateness as solutions to the problem. Certain courses of action might be designated as inappropriate on the basis of thorough knowledge of the Whitman School situation. Then one could, in effect, put a scoring stencil over the record sheet and count the number of inappropriate courses of action carried out by a particular examinee. In the case of the item involving Miss Blake, the second course of action (obtaining a substitute without involving the superintendent's office) would likely be classified as inappropriate because the Staff Handbook at the Jefferson schools specifically prescribes a different procedure. The scoring of courses of action in terms of appropriateness had to be abandoned primarily because it was not possible to determine the appropriateness of a large majority of the courses of action that were taken. It proved to be impossible to obtain a reasonable degree of consensus among qualified judges as to the appropriateness of the different courses of action.

Another way of looking at the content of the courses of action is in terms of their imaginativeness. Several members of the research staff went through all the courses of action and selected those which they thought were in some degree creative or imaginative; and eventually, after much discussion, a scoring key was developed. For example, the response to Miss Blake's telegram "Use (or consider using) Miss Ash as substitute" (regardless of the merits of choosing Miss Ash) does require a certain amount of ingenuity, since Miss Ash is introduced in a different context in a different item. Being imaginative was defined as choosing courses of action that are "good ideas," that go beyond the actions immediately suggested by the stimulus materials. The Imaginativeness score is the number of courses of action taken by a principal that were keyed as imaginative. It is to be expected that the content score, Imaginativeness, will be correlated with certain of the stylistic scores -- for example, Conceptual Analysis or Usual Courses of Action -- because of certain similarities in the definitions.

A third procedure for scoring the content of the courses of action was in terms of Organization Change. For this score those courses of action were keyed which involved (1) changes of personnel (through hiring, firing, or transfer), (2) change of duties or assignments of personnel which go beyond a single task or assignment, and (3) change of a policy, practice, or procedure. This last category would include, for example, efforts to improve cooperation among staff members, provided the efforts go beyond a single problem or assignment. The score on this measure reflects the extent to which the subject introduced or considered introducing changes into the organization. Eighty-seven courses of action from the three school in-baskets and 83 from the Bureau of Business were keyed for the Imaginativeness score. The comparable numbers were 28 and 42 for the Organizational Change score. The maximum possible score across all four in-baskets for Imaginativeness was therefore 170, and for Organizational Change, 70. Since the courses of action so keyed tended to be rather uncommon ones, the means may be expected to fall much below these upper limits.

Ratings of In-Basket Behavior

Thus far two major methods of scoring have been described, one based on content and the other on style. Both require an analytical approach to the principals' responses. It is also possible to view the responses more subjectively and globally. A third method of scoring required the scorer of the in-basket to make over-all judgments about each principal, as the final step in the scoring procedure. The last page of the score sheet is called the Over-all Rating Form. It presents, first, 21 pairs of adjectives, with instructions to check the one of each pair which best describes the principal's behavior. Examples of the pairs are as follows:

Friendly-Aloof
Slipshod--Painstaking
Cold-hearted--Genial
Logical--Intuitive
Witty--Humorless

Next, the scorer was asked to answer each of three questions by circling a number on a rating scale. The three questions were as follows:

1. On the basis of what you know about the Subject, how well do you think he would perform as the principal of Whitman School (or as the executive officer of the Northeastern Division of the Bureau of Business)?

2. How popular would you judge the Subject to be with his staff?

3. How well do you like the Subject?

Evaluation vs. Description in Scoring

It will be noted that judgments of "goodness" or "badness" of the in-basket responses have been avoided in the scoring of individual in-basket items. Evaluative judgments were made by the scorers only in the final step in the scoring process, as just described, and evaluative judgments were involved to some extent in the designation of certain courses of action as imaginative. The predominant approach to scoring, however, was one that provided a rather complete description of administrative behavior without introducing value judgments.

The primary purpose of the scoring system is to provide a method for describing a principal's administrative behavior in terms of a relatively small number of attributes or variables. Some evidence will be presented in this study as to the relation of these attributes to judgments of quality of administrative behavior. But it will be the job of future studies to determine more precisely to what extent, or under what conditions, these attributes are good or bad.

The Scoring System

The Score Sheet

The Score Sheet has already been described in a fragmentary way. In this section it will be described in more detail.

The Score Sheet is actually a seven-page booklet. Pages 2-6 consist of cells which are formed by rows, representing in-basket items, and columns, representing scoring categories. The task of the scorer is to place entries in these cells to indicate whether (or, in the case of some categories, to what extent) the behavior described by the scoring category was exhibited on the item. Each item can be thought of as providing an opportunity for each category of behavior to appear. The column totals indicate how often the behavior did appear.

In the case of those columns which pertain to content scoring, the procedure is somewhat different, as has already been suggested. For these columns, each cell has a unique meaning which is defined by one of the assigned courses of action for that item.

Certain other judgments were made by the scorer. Before beginning detailed scoring, but after looking through the in-basket, the scorer recorded on the front cover of the Score Sheet his judgments as to the subject's planning of activities (as evidenced by such things as his setting up a calendar or making organized notes for himself) and the subject's neatness. The last page of the Score Sheet is the Over-all Rating Form which has already been described.

Two forms of the Score Sheet were used. On one form only odd-numbered in-basket items appeared and on the other only even-numbered in-basket items. The two forms were used because, for the purpose of obtaining estimates or reliability, odd- and even-numbered items were scored by different scorers.

The Scoring Manual

Essential to the operation of a successful scoring procedure was the development of a scoring manual for use by scorers. The Manual contains 165 pages of rules, definitions, and examples to which a scorer referred when she encountered a scoring problem.

The Scoring Manual begins with a brief description of the in-basket test and what is entailed in scoring it, a list of suggested steps in scoring, and a set of general instructions. The bulk of the Manual is composed of lists of courses of action for the items in all in-baskets and detailed definitions, rules, and examples for use in scoring each behavior category. Illustrations of courses of action have already been given. An illustration of the definitions and rules for scoring other categories of behavior follows.

> DELAYS OR POSTPONES DECISION, OR TEMPORIZES
>
> General Definition: Score here if the S. clearly delays or postpones decision on the item. Score also any response communicated to another that indicates that the S., after having considered the item, is unwilling to commit himself to a decision or to a leading action at the present time. E.g., in response to a request of some sort, the S. neither complies fully nor refuses to comply, but merely stalls for time by stating that he will think about it, study it, get further information, etc., but takes no steps to get the further information.
>
>> Rule a: Do not score here if the S. has done any further degree of deciding, i.e., if his response is scored in APR, CTD, or CGD. (Arrives at a Procedure for Deciding, Contingent Decision or Concluding Decision)
>>
>> Rule b: If the S. merely postpones, score here, but do not score in "Plans Only," or in "Work Scheduling." If he postpones until a specific time, score here and in "Work Scheduling," but not in "Plans Only."

Selection and Training of Scorers

The people employed as scorers were housewives from the Princeton area. All were wives of graduate students or professional men. They were carefully selected on the basis of vocabulary test, a reading comprehension test, and an interview. All had attended college and some had advanced degrees. About a dozen scorers and three checkers were involved in the scoring of the in-baskets.

The first step in training a scorer was to require her to take the in-basket which she was expected to score. The scorer was asked to study all the background material carefully before taking the test and after taking the test to study the Scoring Manual.

Next, the scorer-trainees met with a staff member for their first experience in scoring. A set of in-basket responses had previously been scored by the staff and were duplicated for use by the trainees. Using these duplicated materials, the instructor went through the entire process of scoring with the trainees, explaining why each response was scored as it was and making sure that the definitions and rules were understood by the trainees.

At the next session, another duplicated set of in-basket responses was used, but this time the trainees were allowed to score the responses with immediate knowledge of results as supplied by the instructor. Again efforts were made as necessary to clarify definitions and rules and to identify unique problems that arose in connection with the scoring of particular items.

After the second session, still another set of duplicated responses was distributed to the trainees, this time with instructions to score them at home. The third session was devoted to a critique of the work of the trainees.

The final session was devoted to further discussions of the unique aspects of various items from the standpoint of scoring. Each trainee then began to score, at first under rather close supervision.

Approximately two weeks, on a half-time basis, was required to train a scorer before she could perform at an acceptable level of accuracy. Not all trainees passed the requirements and not all those who passed succeeded in maintaining the standards of accuracy required for the study.

Control of the Quality of Scoring

The quality of the scorers' work was evaluated by using quality control procedures analogous to those employed in industry. The managers of a factory producing light bulbs might decide that a given lot of bulbs is satisfactory if it contains no more than, say, .2% defective bulbs. However, it is not feasible to test every light bulb in the lot, and, furthermore, the fact that a given light bulb passed the test cannot be accepted as infallible evidence that it is a "good" bulb. A more economical procedure than testing every bulb is needed for deciding whether to accept or reject a given lot.

The problem of checking scoring accuracy is similar. It is necessary to accept some errors in scoring, and the best that can be accomplished is to be able to state with a known degree of confidence that the proportion of errors is not greater than some specified level. In scoring responses to an in-basket item, the test of scoring accuracy consisted of an independent rescoring of the items. This is obviously a fallible test since the checker could also make errors. As in the case of quality control in industry, the volume of work to be done precluded rescoring every item.

The method used to control the accuracy of scoring was based on a paper prepared by Ratoosh[4] which in turn was an adaptation of Wald's[5] sequential analysis procedures. Generally, one begins by testing a small sample from a lot; if the lot can be accepted, no further checking is necessary. But if for the sample tested the lot can be neither accepted nor rejected, one continues sampling until a decision can be made about the quality of the lot.

The procedure was ordinarily applied to each scorer individually; that is, a "lot" was the work of a single scorer. For the accuracy and confidence levels desired (discussed later), it turned out that a minimum of 56 items would need to be checked in order to accept the lot as satisfactory. As soon as a scorer had scored his first lot of in-baskets, the test was applied. A total of 56 items was chosen from the lot one at a time on the basis of a list of random numbers. These items were rescored independently by the check scorer on all scoring categories, and a comparison was made for each category with the original scorer's scores to determine the number of agreements. (The item was replaced in the lot after it had been checked.) By entering a nomograph prepared for the purpose, one could determine whether for that sample the proportion of agreements was (1) great enough to accept the entire lot, (2) small enough to reject the lot, or (3) required the examination of a larger sample before a decision could be reached.

4/ Ratoosh, Philburn. A Sequential Sampling Inspection Scheme for Determining the Mean of a Binomial Distribution When the Test for Inspection is Not Perfectly Valid. Unpublished paper, 1955.

5/ Wald, Abraham. Sequential Analysis. New York: John Wiley & Sons, Inc., 1947.

In developing a nomograph for determining the result of the testing of each lot, it was necessary to estimate the probability that the checker was correct. This probability was arbitrarily set at .98. It was also decided arbitrarily that the lot would be accepted if the "true" proportion of correct scorings was 95 or higher, and that the lot would be rejected if the "true" proportion was 90 or lower. Some absolute values resulting from the standards so set are as follows:

TABLE VI-1. THE STANDARDS FOR ACCEPTANCE OR REJECTION OF THE LOT

Number of Items Checked	Number of Disagreements Which Permit Lot to Be Accepted	Number of Disagreements Which Cause Lot to Be Rejected
56	0	10
66	1	11
76	2	12
86	3	13
96	4	14
106	5	15

Thus, if there were no errors in a random sample of 56 items, the entire lot was judged satisfactory; but if there were 10 or more errors in that sample, the lot was judged unacceptable. If the number of errors was greater than 0 but less than 10, the testing was continued, increasing the size of the sample. Sampling was on an item basis, and all categories were checked at the same time for the same sample of items.

Certain modifications of the procedure were introduced because of the large number of category scores involved in the testing of a sample. It was arbitrarily decided that the lot would be accepted as adequately scored on all categories if no categories were rejected by the above method, and if no more than three categories were in the uncertain region. If, with a sample as large as 106, the above criterion of acceptability was not met, the lot was rejected, rescored, and then re-examined. Without such a limit, it would have been possible to continue sampling indefinitely without reaching a decision.

Information from the rescoring was, of course, fed back to the scorers. Steps were taken to identify the nature of the scorers' difficulties, and attempts were made to retrain the scorers. Most scorers were able to profit from this form of retraining and to perform at an acceptable level thereafter.

It was soon discovered that for a number of categories the standards originally set were too high and simply could not be met. Consequently, less rigorous standards were set for such categories. The new standards involved the assumption that the check scores were 95 per cent accurate (instead of 98) and required that the proportion of correct scorings be 80 or more for acceptance and 75 or less for rejection. The absolute values associated with the revised standards are as follows:

TABLE VI-2. THE REVISED STANDARDS FOR ACCEPTANCE OR REJECTION OF THE LOT

Number of Items Checked	Number of Disagreements Which Permit Lot to Be Accepted	Number of Disagreements Which Cause Lot to Be Rejected
56	2	27
66	4	29
76	7	32
86	9	34
96	12	37
106	15	39

Twenty of the 68 scoring categories were in the group for which lower standards were set. These included the following scoring categories:

Unusual Course of Action
Conceptual Analysis
Discusses with Subordinates
Asks for Information, Opinion, Advice, or Permission from Subordinates
Requires Further Information
Arrives at a Procedure for Deciding
Concluding Decision
Makes Tentative or Definite Plans Only
Work Scheduled: Indefinite Time or No Time Specified
Takes Leading Action
Takes Terminal Action
Follows Lead by Subordinates
Follows Lead by Superiors
Follows Lead by Outsiders
Follows a Pre-Established Structure
Initiates a New Structure
Gives Directionsand/or Suggestions
Gives Information to Subordinates
Gives Information to Superiors
Gives Information to Outsiders

Scoring Procedures

The general procedure used in scoring involved assigning one scorer to the odd-numbered items in each in-basket and another to the even-numbered items in each in-basket, making a total of eight scorers needed. Each scorer thus became a specialist and was thoroughly familiar with the subtleties of each of her 16 or 17 items and all of the many courses of action found in the responses to these items. The schedule for completion of the project demanded that each scorer, working on a part-time basis at home, score 15 half-in-baskets per week. Scorers were paid on a piece-rate basis. Some scorers easily maintained this schedule while others for various reasons could not. Consequently the ideal of one scorer for each half-in-basket could not be maintained. In a few cases more than one scorer was involved in the scoring of odd- or even-numbered items of a particular in-basket. In some such occasions, the sequential sampling technique was applied to the scorers who collectively were involved in the scoring of a particular half-in-basket.

No complete or systematic rescoring of in-baskets was undertaken, and consequently no "scorer reliability" can be reported. Scorer reliability could be defined as the correlation between scores resulting from the independent scoring by two scorers of the same in-baskets. The reliabilities reported in Chapter VII all involve correlations between different sets of in-basket items; they therefore reflect both the unreliability of scoring and the inconsistency in behavior of the examinees.

The Scoring Categories

In this section all the 68 scoring categories are described in sufficient detail to enable the reader to interpret for himself some of the findings to be reported later. These descriptions are abstracted from the Scoring Manual.

In Table VI-3 are shown the means and standard deviations of the category scores for the total of all four in-baskets, for the three school in-baskets, and for the Bureau of Business In-Basket. The scores on which these means and standard deviations are based were obtained by adding the numbers recorded by the scorers in the appropriate columns of the in-basket score sheets. For the total score, the mean scores are based on the totals for the three school in-baskets and the Bureau of Business In-Basket, comprising 132 items. The means for the three school in-baskets are based on 96 items, and for the Bureau of Business In-Basket on 36 items.

TABLE VI-3. THE MEANS AND STANDARD DEVIATIONS OF 68 CATEGORY SCORES

N=232

Scoring Category	Four In-Baskets (132 items)		Three School In-Baskets (96 items)		Bureau of Business In-Basket (36 items)	
	Mean	SD	Mean	SD	Mean	SD
Estimated Number of Words (Rating)	330.46	50.11	255.91	37.70	74.55	16.35
Number of Items Not Attempted	10.53	13.39	6.61	9.58	3.92	5.04
Usual Courses of Action	167.13	32.59	127.04	24.15	40.08	10.85
Rejection of Test Conditions	3.94	3.69	3.31	3.08	.63	1.14
Number of Subordinates Involved Individually	102.27	21.45	69.34	16.70	32.93	7.83
Number of Subordinate Groups Involved	32.77	8.37	31.92	8.04	.84	1.25
Number of Superiors Involved	15.18	4.74	12.94	3.92	2.24	2.07
Number of Outsiders Involved Individually	38.44	7.85	29.04	5.70	9.41	3.47
Number of Outside Groups Involved	10.34	3.93	8.06	2.84	2.27	2.08
Unusual Course of Action	21.52	6.52	17.64	5.81	3.87	2.43
Gives Recognition for Ability or Good Work	3.42	2.38	2.77	2.07	.65	.74
Shows Awareness of Poor Work	7.69	3.83	5.38	2.80	2.32	1.88
Carelessness or Minor Error	6.33	5.43	5.45	5.22	.88	1.10
Socially Insensitive	3.32	1.66	.44	.69	2.88	1.45
Relates to Background Material or to Other Items	17.01	7.00	11.21	5.24	5.81	3.68
Conceptual Analysis	11.19	7.04	8.78	5.39	2.40	2.88

TABLE VI-3 (Cont'd)

Scoring Category	Four In-Baskets (132 items)		Three School In-Baskets (96 items)		Bureau of Business In-Basket (36 items)	
	Mean	SD	Mean	SD	Mean	SD
Prejudges, Makes Unwarranted Assumptions, or Largely Inappropriate Perception	4.67	2.37	2.77	1.77	1.90	1.34
Uses Human or Personal Values in Analysis	2.99	2.35	2.61	2.10	.38	.70
Uses Physical Values in Analysis	.28	.55	.27	.52	.01	.09
Uses Program Values in Analysis	6.57	4.64	4.91	3.82	1.67	1.75
Discusses with Subordinates	28.33	10.14	23.16	8.26	5.16	3.16
Discusses with Other Principals	1.06	1.07	1.05	1.06	.00	.07
Discusses with Superiors or Outsiders	12.42	4.78	10.23	3.71	2.19	1.84
Asks for Information, Opinion, Advice or Permission from Subordinates	15.83	7.99	11.06	5.85	4.77	3.19
Asks for Information, Opinion, Advice or Permission from Superiors	2.53	1.91	2.24	1.75	.29	.61
Asks for Information, Opinion, Advice or Permission from Outsiders	2.99	2.21	2.49	1.87	.50	.77
Requires Further Information	20.85	8.25	17.21	6.69	3.64	2.83
Delays or Postpones Decision or Temporizes	9.57	6.97	8.13	6.05	1.44	2.03
Arrives at a Procedure for Deciding	42.80	11.50	33.24	8.74	9.56	4.29
Contingent Decision	3.33	2.30	2.79	2.06	.54	.75
Concluding Decision	64.06	11.52	44.44	8.91	19.61	4.41
Makes Tentative or Definite Plans Only	32.20	16.54	30.75	15.59	1.46	2.16

TABLE VI-3 (Cont'd)

	Four In-Baskets (132 items)		Three School In-Baskets (96 items)		Bureau of Business In-Basket (36 items)	
	Mean	SD	Mean	SD	Mean	SD
Work Scheduled for Same or Following Day	15.80	7.18	13.39	6.03	2.41	2.23
Work Scheduled for Same or Following Week	11.72	7.46	10.31	7.02	1.42	1.44
Work Scheduled: Indefinite Time or No Time Specified	39.97	12.17	35.30	11.22	4.68	2.77
Takes Leading Action	41.78	14.94	30.86	12.48	10.92	4.47
Takes Terminal Action	39.83	10.31	21.97	8.20	17.85	4.20
Follows Lead by Subordinates	28.26	5.07	18.94	3.14	9.32	2.99
Follows Lead by Superiors	19.00	3.81	14.91	2.41	4.09	2.05
Follows Lead by Outsiders	21.62	3.96	18.88	3.21	2.74	1.88
Follows a Pre-Established Structure	36.21	9.22	27.75	8.81	8.46	1.98
Coordination	.98	1.47	.61	1.13	.37	.71
Initiates a New Structure	49.99	11.31	37.78	9.19	12.22	3.97
Delegates Completely	1.86	1.52	.75	.95	1.11	1.08
Delegates Partially with Control	1.29	1.43	1.15	1.38	.15	.38
Delegates Partially but without Control	4.33	3.41	2.89	2.83	1.44	1.42
Gives Directions and/or Suggestions	51.65	13.73	38.19	11.00	13.46	4.95
Refers to Superiors	.99	1.17	.61	.76	.38	.79

TABLE VI-3 (Cont'd)

	Four In-Baskets (132 items)		Three School In-Baskets (96 items)		Bureau of Business In-Basket (36 items)	
	Mean	SD	Mean	SD	Mean	SD
Communicates Face-to-Face	45.73	12.65	39.84	10.32	5.89	3.53
Communicates by Telephone	15.31	6.11	12.86	5.19	2.45	2.32
Communicates by Writing	77.64	15.97	51.02	13.13	26.62	5.25
Gives Information to Subordinates	20.53	6.52	18.07	5.86	2.46	1.82
Gives Information to Superiors	4.85	2.42	4.56	2.24	.29	.61
Gives Information to Outsiders	10.84	4.18	9.24	3.74	1.61	1.22
Explains Actions to Subordinates	2.93	2.91	1.12	1.38	1.81	2.04
Explains Actions to Superiors	.65	.89	.31	.56	.34	.62
Explains Actions to Outsiders	1.76	1.44	1.44	1.28	.33	.61
Courtesy to Subordinates	24.12	13.64	19.82	11.53	4.30	3.77
Courtesy to Superiors	1.44	1.63	1.38	1.54	.05	.26
Courtesy to Outsiders	7.33	3.87	6.21	3.42	1.12	.98
Informality to Subordinates	13.25	13.73	9.19	11.29	4.06	4.78
Informality to Superiors	.76	1.25	.42	.90	.34	.71
Informality to Outsiders	.40	.63	.06	.26	.33	.55
Backs-up Teachers or Staff Officers	.52	.72	.50	.72	.01	.11

TABLE VI-3 (Cont'd)

Scoring Category	Four In-Baskets (132 items)		Three School In-Baskets (96 items)		Bureau of Business In-Basket (36 items)	
	Mean	SD	Mean	SD	Mean	SD
Improves Staff	.29	.64	.29	.64	.00	.00
Attempts to Improve the Working Conditions of the Staff	.06	.28	.06	.28	.00	.00
Imposes Controls: Sets a Deadline	1.04	1.24	.87	1.12	.17	.45
Imposes Controls: Follow-up or Feedback Planned	.87	1.08	.71	1.00	.16	.42

Estimated Number of Words (Number of Words)

The scorers were instructed to estimate, not actually count, the number of words written in response to each item. The numbers entered on the score sheet are coded values with the following meaning:

0 = nothing written
1 = very short (1-6 words)
2 = short (7-15 words)
3 = medium (16-40 words)
4 = long (41-100 words)
5 = very long (101-200 words)
6 = extremely long (more than 200 words)

The scoring rules defining what constitutes a word are spelled out in detail in the Manual.

When the mean total score (in the top row of Table VI-3) was divided by 132, the number of items in all in-baskets, the mean code value per item was found to be 2.5--midway between short and medium. The "typical" response therefore involved about 15 words. The mean for the Bureau of Business In-Basket was smaller (2.1); the reason may be that in the Bureau of Business In-Basket, "buck slips" such as are frequently used in business were supplied; these permitted the principals to communicate merely by making checkmarks on routing slips.

Number of Items Not Attempted (Items Omitted)

In scoring for number of words written, a special code (9) was used to indicate that the item was not attempted. The fact that the examinee wrote nothing in response to an item did not necessarily mean that he did not attempt it. For example, in the Reasons for Action form the subject might say, "Not a pressing problem--postponed," or "This needs more work than I can give it today." Such responses showed that some analysis of the item had been made. The item was coded 9 (not attempted) only when there was no evidence that the subject made any attempt to analyze the item. The code 9 would be used when no words were written and the Reasons for Action form was left blank or contained such comments as "Did not get to" or "No time."

The number of items omitted on the average was about 2.6 per in-basket (one-fourth of the mean for Total, since the total was based on four in-baskets). The omission rate was greater for the Bureau of Business In-Basket than for the school in-baskets (3.9 as compared with 2.2), probably because the Bureau of Business In-Basket contained more items (36 as compared with an average of 32 for each school in-basket). It is also possible that the difference was due in part to a greater familiarity of the principals with school problems and to differences between school and Bureau of Business in-baskets with respect to difficulty of the items.

Usual Courses of Action (Usual Actions)

As has been described earlier in this chapter, the courses of action which occurred most often were identified for each item, and ten columns of the Score Sheet were reserved for recording the presence or absence of each identified course of action for each problem. The number of courses of action is the sum of these courses of action over all ten columns and all items. The average number of courses of action per In-basket was about 42 (out of about 210 possible) for the school in-baskets and 40 (out of a possible 304) for the Bureau of Business In-Basket (even though the Bureau of Business In-Basket had a few more items). On the average, the subject thus took slightly more than one course of action per item.

Rejection of Test Conditions

This variable was not intended as a measure of administrative behavior, but was included to provide information pertinent to the question of how successful was the simulation of the principal's job. The scorers recorded a 1 under Rejection of Test Conditions whenever the principal failed to follow certain of the test conditions. This category was scored if, for example, the examinee made a comment directed to the research staff, or if he "fabricated." The most usual reason for scoring this category was the latter; fabrication was scored whenever the subject invented conditions other than those described by the test materials or other than those under his own control. Fabrication was scored, for example, if the subject invented a two-way telephone conversation or created a group such as the "Jefferson Anti-Vivisection League."

Rejection of test conditions occurred infrequently. The mean was about one occurrence per in-basket.

Number of Subordinates Involved Individually (Subordinates Involved)

This is another one of the categories in which the scorer could record a number greater than one. The number represents the number of subordinates individually involved in the solution to the problem. If, for example, a principal called a meeting to be attended by a teacher, a parent, and a reading consultant, the scorer would record 2, since both teacher and reading consultant would for this purpose be classified as subordinates. The Manual specified the persons who are considered subordinates and what constitutes involvement. A subordinate was considered "involved" only if it was clear that the subordinate would come to know about the principal's course of action through the action itself, whether the action was actual or merely planned, and no matter how deeply or superficially the subordinate was involved.

The same subordinates might, of course, be counted more than once in the subjects' total score, since the score was the sum of the entries in the category column. For all four in-baskets the mean number of subordinates involved per in-basket was about 25. There was a fairly marked tendency to involve more subordinates in the Bureau of Business situation (32.9); this was probably because in the Bureau of Business the subject had a fairly large administrative staff reporting to him. Principals do not have a large staff in the same sense, since the teacher's first job is to teach, not to perform tasks delegated to them by the principal.

Number of Subordinate Groups Involved (Subordinate Groups Involved)

This category was scored in the same manner as the preceding one except that groups were involved instead of individuals. Calling a meeting of the faculty, planning a meeting of all the third grade teachers, or planning a school assembly would each be examples of involving subordinate groups. Subordinate groups were involved about ten times per in-basket in the school situation but less than once, on the average, in the Bureau of Business. The difference again appears to be due to the nature of the situations as presented; the Bureau of Business simply does not contain very many groups, as defined by the Scoring Manual.

Number of Superiors Involved (Superiors Involved)

The involvement of superiors was scored in a manner similar to the above category. As in a previous category, the same people may be involved repeatedly. As a matter of fact, in the Bureau of

Business In-Basket there was essentially only one superior who could be involved; so the category might better have been called number of times the vice-president is involved." In the school in-basket, the superiors were the superintendent (or his office or his secretary), the two assistant superintendents, or the Board of Education.

Involvement of superiors was a much less common occurrence than involvement of subordinates. It happened almost four times per school in-basket and almost half that often for the Business In-Basket.

Number of Outsiders Involved as Individuals (Outsiders Involved)

This category was scored in a manner similar to the above. Outsiders were people outside the organization. In the school situation, outsiders included such people as parents, city officials, and members of PTA groups. In the Bureau of Business, outsiders were most often dues-paying members of the Bureau of Business. Outsiders were involved on the average nine or ten times per in-basket.

Number of Outside Groups Involved

Outside groups included organizations such as the League of Women Voters or the Parent-Teacher Association. Involvement of outside groups was scored if the examinee did not single out individuals. This category was scored, on the average, only a little more than twice per in-basket.

Unusual Course of Action (Unusual Actions)

Under this category heading, the scorer recorded 1 if the subject took any action not listed in the courses of action which were used in the content scoring. Trivial actions, such as typing, filing, delaying, holding for later study, etc., were not scored as unusual actions.

Since the scoring rules called for 0-1 scoring rather than the number of unusual actions, we cannot rigorously use the total score as the total number of unusual actions. However, if it is assumed that no more than one unusual action per item was taken by any candidate (as was usually true), there were about five or six unusual courses of action per in-basket, on the average, as compared with about 42 usual courses of action. It therefore appears that the great majority of ways of responding to items had been identified in the procedures used in establishing the courses of action. The somewhat smaller number of unusual actions for the Bureau of Business In-Basket probably reflects the different method used for specifying courses of action.

It is tempting to think of Unusual Action as a score which reflects creativity in problem-solving. From the description of the method of scoring, it can be seen, however, that strictly speaking the score means merely the number of actions taken that did not get tabulated in the list of courses of action. Unusual actions may reflect either genius or stupidity. Other evidence may reveal something of the nature of this variable.

Gives Recognition for Ability or Good Work (Recognition for Good Work)

This category was scored 1 whenever the subject commended a subordinate for doing good work or otherwise showed that he recognized a good job or high ability. An example of recognizing good work was, "Thank you for drafting the letter to Mrs. James. It was very well written."

Ordinarily good work could not be recognized unless a subordinate's work was available for inspection. Here is a case where the number of opportunities did not quite equal the number of items in the in-baskets.

Even in the light of this, recognition of good work was rather rare; it occurred on the average less than once per in-basket.

Shows Awareness of Poor Work (Aware of Poor Work)

This category is somewhat analogous to the preceding one, except that it is not limited to the work of subordinates and that only evidence of awareness is necessary for scoring--the subject need not actually reprimand a subordinate, for example. Noticing anything from poor typing to ill-advised plans would be scored. Awareness of poor work occurred about twice as often as recognizing good work in the school situation and relatively much more often in the Bureau of Business, possibly because more poor work than good work of subordinates was presented in the in-baskets.

Carelessness of Minor Error (Careless)

This category has to do with whether the examinee himself committed an error. In order to increase scoring accuracy, scoring this category was permitted for four specified types of error: checking or signing a buck slip or form in the wrong place, confusing or misspelling names or positions of people, using a wrong date, and omitting or misspelling a word. Such errors were relatively uncommon. On the average, fewer than two errors per in-basket were found. The lower score for the Bureau of Business In-Basket is probably due to the use of buck slips.

Socially Insensitive

This category was scored when the subject carried out or planned to carry out an action which might be unintentionally offensive to someone, or unnecessarily hurt someone's feelings. Every item presents an opportunity for the subject to be socially insensitive. In addition, certain items were included in the Bureau of Business In-Basket which were made specifically for the purpose of measuring this characteristic. One item, for example, involved a subordinate proposing a form letter for use in a certain situation. The letter contained sentences which could be construed as reflecting unfavorably on the recipient. Approval of the letter without changing these sentences was scored as Socially Insensitive.

Social insensitivity almost never occurred in the school in-baskets; but it was scored almost three times per in-basket, on the average, for the business situation. Apparently social insensitivity was rare as an aspect of spontaneous behavior. It is also possible, of course, that social insensitivity is thought to be less forgivable in school than in a business setting.

Relates to Background Materials or to Other Information Items (Relates to Other Materials)

This category refers to the subject's seeing the item in relation to information previously presented to him or which is in some other part of the in-basket. Explicit use of background materials in solving a problem was scored here, even if it merely involved looking up a name. Seeing two items as related in some way would also be scored; for example, thinking of Miss Ash (who was presented as someone who needed part-time work) as a possible substitute for the ill Miss Blake was scored here. Such behavior was scored, on the average, about six times per in-basket.

Conceptual Analysis

Conceptual analysis has to do with the subject's perceiving the problem as involving more than what was immediately obvious in the stimulus materials. For example, if the subject generalized from the specific case and saw additional implications of the problem, or if he saw the problem in relation to a larger situation, Conceptual Analysis was scored. Seeing morale or public relations implications of an action are examples of Conceptual Analysis. If, when the subject heard of a couple of problems involving field representatives in the Bureau of Business, he raised the general question of how well field representatives were being supervised, he was scored for Conceptual Analysis.

Conceptual Analysis was not a particularly common type of behavior, since it was scored less than three times per in-basket, on the average.

Prejudges, Makes Unwarranted Assumptions, or Largely Inappropriate Perception (Prejudges)

As is implied by the way this category is named, it resulted from the combination of three notions about stylistic variations in in-basket responses. The three were combined because separately their occurrence was too rare to yield dependable scores, and, of course, because they appeared to have something in common. As will be seen in Chapter VII, this combination seems to be justified.

Prejudging was shown by a subject acting, or planning to act, without being adequately informed on both sides of an issue. For example, if he received a letter in which a parent made an accusation against a teacher and acted as though the charge were true, making no attempt to verify it, a score of 1 would be recorded. Making unwarranted assumptions involves a related concept. The category was scored when the subject acted or planned to act, in a manner which implied assumptions for which there was no actual basis.

Similarly, when the subject's response revealed that he misunderstood the item, he was scored on this category.

Even when the three notions were combined, the category was, on the average, scored rather infrequently--about once per in-basket for the school situation and about twice that frequently for the Bureau of Business.

Uses Human or Personal Values in Analysis (Human Values)

Whenever the subject showed, in his response or in his explanation on the Reasons for Action form, that he explicitly took account of human welfare or happiness in his analysis of the problem, the response was scored for Human Values. For example, in one item a parent wrote a letter demanding that the school psychologist cease seeing her daughter; a response which clearly shows that consideration for the welfare of the child was a factor in what was done about the letter would be scored here.

This category was rarely scored, especially for the Business In-Basket where the mean score was .38. Only once in about three business in-baskets was concern expressed for Human Values as compared with about one per school in-basket.

Uses Physical Values in Analysis

This category was similar to Human Values except that it involved concern for buildings and equipment. Use of this category by scorers was extremely rare.

Uses Program Values in Analysis (Program Values)

This category was similar to the preceding ones, but it involved concern for things pertinent to the successful accomplishment of the purposes of the school (or the Bureau of Business). If the subject showed concern for community support of the school, public relations, the instructional program, educational opportunities for children, and the like, he was given a score on this category.

A response scored for Program Values was almost always scored also for Conceptual Analysis; but the reverse of this statement was not true. Conceptual Analysis was actually scored most often because of responses which expressed concern for possible public relations problems.

Concern about Program Values was much more common than for Human or Physical Values, but still quite uncommon. The mean score for one in-basket was about 1.6.

Discusses with Subordinates

This category was a simple one to score. A 1 was recorded for any response which indicated that the subject made or planned to make arrangements for a discussion with a subordinate or subordinates. The proposed meeting clearly involved a two-way "give and take," not merely the giving or getting of information.

Discussions were planned typically in response to about seven items per in-basket (fewer for the Bureau of Business In-Basket). Thus the responses to between a fifth and a quarter of the problems involve having discussions with subordinates.

Discusses with Other Principals

This category of behavior similarly involved discussions, but with principals of other Jefferson schools. This behavior, of course, did not occur at all in the business situation, and it was rare in the school in-baskets, perhaps because the background materials did not include very much information about other principals. This kind of behavior occurred only about once in every three in-baskets.

Discusses with Superiors or Outsiders (Discusses with Superiors)

In this category the discussions were typically with people from the superintendent's office or with parents, P.T.A. officers, and the like. Discussions with superiors or outsiders were planned less than half as frequently as with subordinates--more than three times per school in-basket and twice per business in-basket, on the average. The difference may be due to differences between the situations: in the Bureau of Business there was only one superior who was out-of-town a lot, and outsiders were likely to be from other cities.

Asks for Information, Opinion, Advice, or Permission from Subordinates (Asks Subordinates)

This category included any effort, actual or planned, to get information, advice, opinion, permission, and the like from a subordinate. Even the response of writing a reminder to "check with Miss Blake" was scored here. Getting information and advice from subordinates was a fairly common type of behavior; it typically occurred between four and five times per in-basket.

Asks for Information, Opinion, Advice, or Permission from Superiors

This category is the same as the preceding one except that it involves superiors instead of subordinates. Superiors were asked for information, advice, etc., much less often than subordinates--less than once per in-basket, on the average.

Asks for Information, Opinion, Advice, or Permission from Outsiders

Asking outsiders occurred only slightly more often than asking superiors for information or advice.

Requires Further Information (Requires Information)

Any response by a subject which explicitly indicated that he needed additional information before making a decision was scored here, regardless of whether he took any action to secure such information. An indication of a need to study or think about a problem was not scored.

In a typical school in-basket, need for information was expressed in the responses to about six of the 32 items, but in the Business In-Basket only 3.6 items.

Delays or Postpones Decision, or Temporizes (Delays)

A response was scored here if the subject clearly delayed or postponed a decision on the item. Merely omitting or not attempting the item was not scored; but if the subject indicated by his response that he had given some consideration to the item and was unwilling to commit himself to a decision or leading action, the response would be scored under this category. The response, "I'll have to think about it," in response to a request for a decision, is an example of delaying. A statement indicating need for further information without taking any steps to get the information would also be scored.

For about three items per school in-basket the response was to delay. For the Business In-Basket this response was scored about half as often, perhaps because a larger proportion of the items were presented in such a way as to increase their urgency.

Arrives at a Procedure for Deciding (Decides on Procedures)

Several types of decision-making processes were distinguished in setting up the scoring categories, one of which is called Arrives at a Procedure for Deciding. This was scored when the subject set up the procedures to be used in reaching a decision about the problem posed by the item. One commonly used procedure for deciding how to solve a problem was to have a discussion; therefore this category would likely be scored each time a category like Discusses with Subordinates was scored. Other procedures for deciding that occurred were appointing a committee, getting information, and getting advice from superiors. This category was scored only when there was an indication that the subject expected to be involved in the decision-making later on.

Procedural decisions were quite common, and they most often involved discussions with subordinates. Procedural decisions were made on the average about ten times per in-basket.

Contingent Decision

Another type of decision-making which can be distinguished in the responses is the Contingent Decision. A contingent decision typically involved the "if...then" or "unless...then" notion. For example, the subject may write, "If what they say about Jeffries proves to be true, I will fire him." Contingent decisions were not frequently found in the responses; the mean was less than one per in-basket.

Concluding Decision

When the problem was disposed of in any final way, Concluding Decision was scored. This category was scored whenever the subject showed that he had made up his mind about what to do about an item regardless of whether action was taken.

Most decisions made in the in-basket situation were of the "concluding" variety, the mean score being about 15 for school in-baskets and almost 20 for the Business In-Basket.

Makes Tentative or Definite Plans Only (Plans Only)

The emphasis in the name of this category is on the words Plans Only. It was scored when plans were made, either tentatively or definitely, but no action was taken toward carrying out the plans. The Scoring Manual emphasizes that if any action is taken, even trivial action, on the plans, the category is not to be scored. Plans Only are likely to take such form as writing a reminder to oneself or writing an agenda or a list of "things to do."

There was a much greater tendency to plan without acting in the school situation (where the mean for one in-basket is about 10) than in the Business In-Basket (mean = 1.5). The difference is probably due to the greater proportion of items in the Business In-Basket which call for prompt action.

Work Scheduled for Same or Following Day (Immediate Work Scheduled)

Three scoring categories were used to find out something about how immediately and how precisely the subject scheduled his work. If the subject specifically scheduled an activity for himself--say a meeting, phone call, or writing a letter--for later the same day or the following day ("today" or "tomorrow"), he was given a 1 for Work Scheduled for Same or Following Day. Work accomplished during the test period was not counted, nor was work started, but not completed during the test period. Only actions initiated by the subjects were scored.

There appeared to be a greater tendency to schedule work for the near future in school in-baskets than in the Bureau of Business In-Basket, the means being about 4.5 and 2.4 per in-basket, respectively.

Work Scheduled for Same or Following Week (Intermediate Work Scheduled)

This category specifically excluded work scored under the previous category, and therefore included work planned for 2 to 14 days after the test day. Matters scheduled for this period were scored whether or not a definite day or hour was set.

Again there was a greater tendency to schedule future work in the school situation, the means per in-basket being about 3.4 and 1.4, respectively.

Work Scheduled: Indefinite Time or No Time Specified (Indefinite Work Scheduled)

In this category the scorers recorded actions in which the subject clearly planned activities for himself to be done at a later time but where no indication was given as to when the job was to be done. In order to be scored here, there had to be some indication that the subject would be involved personally in the later action.

The tendency for more future work to be planned in the school than in the business situation showed up for this category as well as for those when the work was planned for a definite time. The mean frequency per in-basket was about 12 for the school and less than 5 for the Business In-Basket.

Takes Leading Action (Leading Action)

This category had to do with taking (not mere planning) some action which has the effect of getting things moving toward a solution to the problem, but which falls short of Terminal Action. In Leading Action there is the expectation that the subject will later take other actions which will be final. Calling a meeting to discuss a problem, writing a memorandum asking for information needed to solve the problem, having a subordinate draft a letter for the subject's approval would all be scored as Leading Action.

Leading actions were common in both types of in-basket, occurring about 10 or 11 times per in-basket.

Takes Terminal Action (Terminal Action)

Terminal Action was scored when the subject took action which assured him that no part of the problem posed by the item would require his attention again. Signing a letter or a report or completely delegating a task to a subordinate are examples of Terminal Action. While future events may raise other related problems if their specific nature is not known to the subject, the action may be scored as terminal.

Roughly half the actions taken were leading and half-terminal, over all in-baskets. There was, however, a markedly greater tendency to take terminal action on the business in-basket than on the school in-baskets. The means per in-basket were about 7 and 18 respectively. The difference may be due in part to the greater urgency that was built into the Bureau of Business In-Basket items or to the general expectation that in business one should behave decisively.

Follows Lead by Subordinates (Follows Subordinates)

A response was scored here if the subject complied or planned to comply with a suggestion or request explicitly addressed to him by a subordinate. For example: the subject is requested by a teacher to telephone a parent, and he plans to do so; a letter is prepared for the subject's signature, and he signs the letter (without revision); the subject is requested to speak at a teachers association meeting, and he accepts the invitation. The Scoring Manual specifies for each item whether or not there was a lead and from whom it came; so the scorer had to judge only whether the subject followed the lead.

In the Bureau of Business In-Basket, the items contained 18 leads by subordinates, and, on the average, the subjects complied with half of them. In the school in-baskets there were again, on the average, eight leads by subordinates per in-basket, and more than half (6.3) were followed.

Follows Lead by Superiors (Follows Superiors)

This category is the same as the preceding one, except that the lead came from a superior. In the Bureau of Business there were more leads from superiors than in the school in-baskets, on the average (8 and 6 respectively). Since the mean response was 4 for the Bureau of Business and 5 per school in-basket, there was a slightly greater tendency to follow leads from superiors in the school situation.

Follows Lead by Outsiders (Follows Outsiders)

Here the leads came from people outside the organization. Again there were approximately the same number of leads coming from the Bureau of Business and school in-baskets (9 and 10 respectively); and there was a tendency to follow these leads more in the school in-baskets. The means are about 3 and 6 per in-basket.

Follows a Pre-Established Structure (Follows Structure)

Pre-established structure has to do with the rules, routines, procedures, policies, customs, regulations, and so on, which appear to be in effect in the organization at the time the subject takes the in-basket. A response was scored here if the subject followed pre-established structure without being specifically instructed to do so.

The Manual lists a number of actions which come under this category--distributing or announcing information to the staff, signing standard forms, having the secretary mimeograph or distribute something, filing, referring problems to existing committees or to individuals whose duty it is to handle such problems, and returning telephone calls.

Pre-established structure was typically followed about nine times per in-basket.

Coordination

Coordination was defined as making specific attempts to arrange activities in such a way as to promote efficiency, avoid conflict, or produce interlocking of some sort between activities which would otherwise be independent. An example of Coordination would be the circulation of a letter or other document for information to people who are not directly concerned with its contents but might need to know about it. It turned out that there were very few instances of behavior which were scorable under this category; Coordination occurred only about once in every three or four in-baskets.

Initiates a New Structure (Initiates Structure)

Structure-in-interaction, according to Hemphill,[6] is any consistency in behavior occurring during interaction that permits one to predict behavior that will occur in future interaction. Initiates Structure then, was conceived of as any act of the administrator which tended to produce such consistency in behavior on the part of members of the organization. Accordingly this category was defined as any response which indicated the subject was developing or putting into use a new procedure involving a subordinate which he devised to fit a specific problem. Appointing a committee to deal with a problem or class of problems or changing a subordinate's duties or responsibilities would be scored here. Such acts tend to produce consistencies in behavior such as are implied by the term structure-in-interaction.

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[6] Hemphill, John K. op. cit.

One of the scoring rules was, "Score here if the S. discusses, or plans to discuss, with one or more subordinates." This rule permitted the inclusion of a type of behavior which is a rather weak example of initiating structure. Unfortunately such behavior occurred so frequently that it became the principal ingredient of this category. The category score therefore cannot be regarded as a very pure measure of initiating structure in the sense originally intended by Hemphill.

The mean score for Intiates Structure is about 12 per in-basket. As we have seen, the mean for Discusses with Subordinates is about 7. If the rule was followed, 7 of the 12 instances of initiating structure were really discussing with subordinates.

Delegates Completely

Three categories have to do with delegation. Delegation was defined as deputizing another to act in the subject's place in effecting a task or decision. In other words, an act was considered delegation only if it involved assignment of a task which the subject himself would normally be expected to do. The duties of the principal were spelled out reasonably well in the background materials for the school in-baskets. For the Bureau of Business In-Basket, the duties considered to be those of Henry Jackson (the subject's role in the Bureau of Business) were stated in the Scoring Manual. If the assignment involved work that the subordinate would normally be expected to do rather than the subject, the act was scored under some other category such as Gives Directions and/or Suggestions.

Delegates Completely refers to tasks assigned with no direction, guides, control, or evaluation before the task is accomplished. Complete delegation therefore implies complete reliance upon the delegatee. If a report is to be made to the subject for information only, after the action has been taken, the act would still be scored as complete delegation.

Perhaps because of this rather narrow definition, complete delegation was found to be rare. Complete delegation occurred typically once in the Bureau of Business In-Basket and much less frequently on the school in-baskets.

Delegates Partially with Control (Controlled Delegation)

This category refers to a task or decision delegated with some guides and with control. The amount of guidance must be such that there is still some decision-making and initiative left to the delegatee; otherwise the action would be scored as Gives Directions and/or Suggestions. By control was meant that the subject provided some means for regulating or limiting the subordinate's actions on the assigned problem. Control might be exercised by asking for a report on plans before they were put into effect or by saying something more general such as "Keep in touch with me on this." Partial delegation with control happened only about once in three in-baskets, on the average.

Delegates Partially but without Control (Uncontrolled Delegation)

The meaning of this category is obvious from the preceding definitions. This was clearly the most common pattern of behavior in delegating; but delegation was in general not at all common. Partial delegation without control typically occurred only about once per in-basket. The mean for delegation in general was about 1.9 per in-basket.

Gives Directions and/or Suggestions (Directs)

Any response in which the subject gave directions or suggestions to another person (subordinate, superior, or outsider) was scored here. In practice, most of this behavior involved subordinates. Certain trivial types of behavior were specifically excluded, such as telling one's secretary to type or mail something. Directing and suggesting was a frequent type of behavior; it typically occurred about 13 times per in-basket.

Refers to Superiors

This category was scored if the subject referred a decision or task to a superior, provided the decision or task was one which the subject might be expected to handle himself. Few problems were referred to superiors; this category was scored about once in four in-baskets, on the average.

Communicates Face-to-Face

This category was scored when the subject indicated his intention to communicate face-to-face with someone. Plans for group meetings or individual discussions that the subject himself planned to participate in were included. Perfunctory invitations such as "Drop in when you're in town" were not scored.

Considering the fact that the test situation did not permit meetings or discussions actually to take place, face-to-face communication was very common. The mean score for a school in-basket was about 13. The mean was considerably lower for the Bureau of Business In-Basket (about 6), perhaps because the buck slips provided such a convenient way of communicating with staff members or because of a conception of business as an institution where formal modes of communication are more appropriate.

Communicates by Telephone

This category was similar except that it involved use of the telephone. Returning a call was included as a scorable response. Telephone communication was scored on the average about 4.3 times per school in-basket and 2.5 times for the Bureau of Business.

Communicates by Writing

Any communication to another person that the subject wrote or planned to write was scored. Signing a letter or a form prepared by someone else was included. Notes to oneself, such as calendar notations or lists of "things to do" were not scored, nor were the written statements of telephone calls.

The testing situation, of course, encouraged communication by writing; the proportion of written communications would likely be lower in the actual job situation. The mean score for an in-basket was about 17 for the school in-basket and 27 for the Bureau of Business. The availability of buck slips may have encouraged communication by writing in the Bureau of Business, and of course the principals may have felt that communication by writing was more appropriate in the business setting.

Gives Information to Subordinates (Informs Subordinates)

This category was scored when the subject gave or planned to give non-trivial, substantive, objective information to a subordinate, whether in connection with a specific problem or merely as background information. "Reminders" were included as scorable responses. Excluded were giving instructions or suggestions, complying or refusing to comply with a request, and communicating the subject's own subjective feelings or beliefs.

The average score for a school in-basket was about 6; giving information occurred only about half as often in the business situation.

Gives Information to Superiors

The same definitions applied here except that information was given to a superior. This category was scored much less often than the preceding one; the mean for a school in-basket was about 1.5 and for the Bureau of Business In-Basket, .3.

Gives Information to Outsiders (Informs Outsiders)

The means for this category are 3.1 for a school in-basket and 1.6 for the Bureau of Business.

Explains Actions to Subordinates

Responses were scored here in which the subject explicitly gave his subordinate reasons for an action. Most commonly this behavior accompanied the giving of suggestions or assignments to a subordinate. For example, the subject might write to a teacher, "You had better arrange to discuss this with the child's parents, because the more we can do to improve our relations with parents the better." One interpretation of explaining actions to subordinates is that it is a form of considerateness in dealing with subordinates.

The mean score for a school in-basket was .4 and for the Bureau of Business In-Basket, 1.8. Although directions and suggestions were given equally often in the two situations, there seems to be a somewhat greater tendency to explain actions in the business situation, perhaps because the business situation was less familiar to the principals who took the tests.

Explains Actions to Superiors

The psychological interpretation of explaining actions is probably different for this category than for the preceding one. In any event, this behavior occurred rarely.

Explains Actions to Outsiders

Here the explanations may perhaps be thought of more in terms of public relations. But again the behavior was rare; the mean for an in-basket was about .4.

Courtesy to Subordinates

Any expression or act of courtesy to a subordinate was scored here. Expressions such as "please," "thank you," and "sorry" were scored as well as more elaborate expressions of solicitude of appreciation or acts which in themselves are courteous. Formal salutations and closings of letters were excluded.

The lower courtesy score for the Bureau of Business In-Basket may be accounted for by the availability of buck slips which permit quite a bit of communication by check mark only or by a different stereotype of acceptable behavior in business.

Courtesy to Superiors

The same definitions as above applied here except, of course, for the recipient. The mean score for a school in-basket was about .5 and for the Bureau of Business only .05.

Courtesy to Outsiders

The mean for a school in-basket was 2.1 and for the Bureau of Business 1.1.

Informality to Subordinates

Any communication to a subordinate which contained an informal expression of some sort was scored here. The use of slang, colloquial language, and first names were all scored as informality.

While courtesy to subordinates was more common in the school situation than in the business situation, the opposite tends to be true for informality; the comparable means for this category are about three and four instances of informality, respectively. In the business setting the principals apparently felt it was more appropriate to be informal.

Informality to Superiors

This behavior occurred rarely--typically at the rate of once in five in-baskets.

Informality to Outsiders

Informality to outsiders occurred even less often than informality to superiors.

Backs-Up Teachers or Staff Officers

Backing up the staff has to do with giving support to a teacher (or to a staff officer) when that person is under attack or involved in a controversy of some sort. Such behavior hardly ever occurred, probably because the in-basket situations did not provide many clear-cut opportunities.

Improves Staff

This category was scored whenever the subject indicated he planned to provide opportunity for his staff to acquire training or otherwise to improve professionally. Even giving encouragement to a staff member to do a better job would be scored here. Such behavior never occurred in the Bureau of Business In-Basket responses; in the school situation, the category was scored, on the average, about once in four in-baskets.

Improves Working Conditions

Under this category would be scored any effort or plans of the subject to improve the working conditions of the staff, including any aspect of the environment from physical conditions to emotional tone. This category of behavior almost never appeared.

Imposes Controls: Sets a Deadline (Sets Deadline)

The last two categories have to do with types of control which an administrator might impose on others as a means of regulating, guiding or limiting their activities in solving a problem. One such control is to set a deadline on work to be done, meetings to be held, or things to be accomplished. Merely setting a date for a meeting or the like was not scored; it was necessary to mention the specific work to be done and specify that it must be done by a certain time. This type of control was observed to happen only about once in four in-baskets.

Imposes Controls: Follow-Up or Feedback Planned

This category had to do with another type of control in which the subject planned to check in some way on the progress made during a course of operations being carried out by others. He might plan to check on a certain day, for example, or he might ask someone else to check for him. Requesting an interim or progress report from someone working on an assignment would also be scored. This control procedure happened even more rarely than the preceding one.

Summary of Differences between School and Business In-Basket Test Performance

In the above discussion of scoring categories, a number of differences between the school in-baskets and the Bureau of Business In-Basket were pointed out. Many of these differences are consistent with the common stereotypes of attitudes and practices which characterize schools as contrasted with business institutions. For example, in the school in-baskets we find greater use of human values in problem-solving; more instances of courtesy to others; a more leisurely approach to problems (more postponing and "plans only" and fewer concluding decisions and terminal actions); more face-to-face and telephone communication, and less written communication; and fewer instances of social insensitivity. Other differences do not so obviously fit the stereotype: in the school in-basket more is written and more items are attempted; more careless or minor errors are committed; and there is greater tendency to give information to outsiders and subordinates and to have discussions with them, but less inclination to be informal with subordinates and to explain one's actions to them.

It is tempting to attribute such differences to the social norms of school and business; but such an interpretation would be risky. In spite of the systematic way in which items were chosen to represent the job of an elementary school principal (as shown schematically in the paradigm in Chapter IV), we do not in fact know to what extent the school in-baskets are representative of the job of the elementary school principal. We have much less reason to believe that the Bureau of Business In-Basket is representative of business. The situation does not even involve a business organization, but rather an association of businessmen. The preparation of the Bureau of Business In-Basket was not guided by a rationale of the sort used in the school in-baskets; on the contrary, it contains many items which were prepared specifically to measure certain characteristics such as social sensitivity. In preparing the Bureau of Business In-Basket, considerable care was taken to present items with great urgency so that action must be taken in the test period rather than deferred. Even the fact that in the Bureau of Business In-Basket routing slips which were provided might easily have influenced the style and manner of communication in a variety of ways.

We must conclude that differences in means of category scores cannot be attributed to the influences of the cultural expectations about behavior in school and business situations. There are too many specific influences, both known and unknown, in the in-baskets themselves to permit such interpretations.

The primary reason for including the Bureau of Business In-Basket was not to provide a basis for comparing administrative behavior in school and business, but rather to provide a wider range of administrative problems for analysis. It was believed that the patterns of interrelationships would generally be the same for both kinds of in-basket and that the nature of the patterns of behavior would be more easily discernible in the intercorrelations among scores which are based on a widely varying set of problems. As will be seen in subsequent chapters, the search for dimensions of administrative behavior was based on scores from all three school in-baskets plus the Bureau of Business In-Basket. In the later phases of the analysis, the patterns of behavior so discovered were used in analyzing the records of behavior obtained from the school situation only.

The Courses of Action

The type of data obtained pertaining to courses of action is illustrated by Table VI-4. The item is the same one referred to earlier--Miss Blake sends the principal a telegram stating that she is ill and will be unable to report for work when school opens. The ten courses of action are listed and the number and percentage of subjects who were scored as taking each course of action is shown. The most usual course of action was to institute the procedure established by the school system for getting a substitute teacher--notify the superintendent's office; but only 80 per cent of the principals took this course of action. Eight of the 232 principals used some other procedure for getting a substitute which did not involve the superintendent's office. About an eighth of the principals conveyed sympathy and about a fifth referred the problem or some aspect of it to Ruth Platz, the Whitman School secretary. The total number of courses of action taken was 335, which is about one and a half per principal.

Another problem found in the in-basket is a handwritten note from Ed Schramm, the head custodian, stating that when he came to work he found the front door unlocked. Nine courses of action were identified for this problem. They are shown in Table VI-5 along with the frequencies and percentages as before.

TABLE VI-4. COURSES OF ACTION TAKEN IN RESPONSE TO MISS BLAKE'S TELEGRAM

	Course of Action	Frequency	Per cent of Principals Responding
A	Communicate with superintendent's office	186	80
B	Personally initiate procedure for obtaining substitute (without involving superintendent's office)	8	03
C	Use (or consider using) Miss Ash as substitute	10	04
D	Provide for instructions and/or help for substitute	21	09
E	Have substitute attend faculty meeting	17	07
F	Convey condolence to Miss Blake	29	12
G	Send Blake (or have sent) card and/or flowers and/or gift, etc.	1	00
H	Call Blake's attention to regulations regarding absence	7	03
I	Have records show Blake absent from Tuesday faculty meeting	4	02
J	Refer to secretary	52	22
	Total courses of action taken	335	

TABLE VI-5. COURSES OF ACTION TAKEN IN RESPONSE TO SCHRAMM'S NOTE

Course of Action	Frequency	Per cent of Principals Responding
A Thank Schramm	45	19
B Discuss with Schramm	137	59
C Have front door lock checked and/or changed	34	15
D Make inventory of keys	29	12
E Involve business manager	30	13
F Involve superintendent's office	17	07
G Involve local police	38	16
H Notify Schramm of action taken and/or plans	27	12
I Clarify responsibility of custodian	9	04
Total courses of action taken	366	

The most common course of action, taken by 59 per cent of the principals, was to discuss the problem with Schramm. The next most common were to thank Schramm (which probably occurs with B in many instances), to involve the police, and to have the lock checked or changed.

It would be possible to describe the responses to each problem in this fashion, but little would be gained by so doing. The methods of scoring described previously represent various methods of summarizing information contained in such tabulations. We shall see in the later chapters how well these methods succeeded in producing measures having satisfactory psychometric properties and how they were related to other variables in the study.

CHAPTER VII

DIMENSIONS OF PERFORMANCE IN IN-BASKET WORK

The in-basket tests constitute the core administrative tasks presented in the simulation of Whitman School. The performance of the principals on the problems presented by these sets of materials, therefore, is of central importance to the study and requires comprehensive analysis. This chapter is concerned with questions about the scores earned by the principals on the 68 categories that were used to describe the principals' responses to in-basket test items with regard to style of administrative performance. The focus will be upon the quality and interrelationships of these scores as performance measures.

The first question to be considered concerns adding of scores assigned to items to obtain a total score for each of the categories. Is such a total score for a category analogous to a sum obtained by adding apples and oranges together? Might it not be necessary, in order to obtain meaningful scores, to add together only a certain selected set of the items for one category and other selected sets of items for other categories?

The second question concerns the consistency with which individual principals displayed the behavior described by each of the categories. Did those principals who chose to be courteous to subordinates, for example, on some items also tend to be courteous on other items? In other words, how reliable are the category scores?

The third question has to do with the dimensions of performance described by the in-basket scores. It may be that the important differences between the principals in their performances on the in-basket tests can be described with many less than 68 different measures. The relationships between the various categories of performance will be examined to locate the basic types of performance that were covered by the different categories.

The analyses of in-basket test performance reported in this chapter are based on the three Whitman School In-Basket Tests and the Bureau of Business In-Basket Test. The decision to combine all four in-basket tests in one analysis was based on the assumption that the basic concepts by which the performance of principals on these tests can be described will not be dependent upon the differences between the two settings. This is not to say that the principals are expected to perform in exactly the same manner in working with the school and business problems, but only that a common framework of performance variables can be applied appropriately to all four tests. The Bureau of Business In-Basket Test was included to enlarge the range of problems and thus to make clearer the basic dimensions of administrative performance.

The Meaning of a Total Score for an In-Basket Scoring Category

It will be recalled that the response of each principal to each item in the in-basket materials was scored for 68 categories of performance (Chapter VI). The score for an item usually was in the form of either a 0 or a 1, 0 indicating that the category or type of behavior was not present in the principal's response and 1 indicating that it was present. For example, if a principal, in his response to Item 1 of In-Basket A, showed courtesy to a subordinate (e.g., wrote "Please" or "Thank you,") in handling the item, the scorer recorded a 1 for the category Courtesy to Subordinates in the appropriate place on her scoring sheet. If the principal did not explicitly show courtesy on the item, a 0 was recorded. A principal's score on the category Courtesy to Subordinates was simply the total number of 1's that the eight scorers recorded for him under this category.

Two principals could have earned the same total score on an in-basket scoring category by displaying the behavior described by that category on completely different sets of items. For example, two principals, each of whom earned a score of 35 on Courtesy to Subordinates, might have accumulated their scores by choosing to be courteous on entirely different sets of 35 items. (In fact, each of the two principals might theoretically have scores as high as 66 on that category without being courteous on a single item in common.) Since it is possible for two principals to earn substantial scores on a category by displaying the performance on different items, the possibility exists that two scores of equal value may indicate entirely different qualities of performance. Thus, the two principals in the example above might have had basically different reasons for being courteous to subordinates, and these different reasons could account for their selection of the mutually exclusive sets of items upon which each earned the score of 35.

The first step in the analysis of the in-basket test scores was to select a small sample of the categories for examination to determine whether adding item scores together to obtain a total category score could be justified.

Each of the 68 in-basket scoring categories was studied, and a judgment was made as to the likelihood that the meaning of a total category score might shift if different principals were to respond to different sets of the items in earning their scores. Judgments were made by members of the research staff who were very familiar both with the content of the scoring manual and with the details of each item included in each in-basket test. The criterion for inclusion of a category in this analysis was the likelihood that it would not be composed of homogeneous items. Five categories were selected for study.

Because of the extensive computation required, this special analysis was limited to 60 of the 132 items. In selecting the 60 items, the entire 132 items were first divided into groups of 66 odd-numbered and 66 even-numbered items. Six items were then removed from one of these groups at random. The categories and items analyzed were as follows:

1. Prejudges, Makes Unwarranted Assumption, or Largely Inappropriate Perception - odd items
2. Prejudges, Makes Unwarranted Assumption, or Largely Inappropriate Perception - even items
3. Initiates a New Structure - odd items
4. Communicates Face-to-Face - odd items
5. Courtesy to Subordinates - even items
6. Unusual Courses of Action - even items

If the scoring procedure was found to be justified for these categories and groups of items, reasonable confidence could be placed in the assumption that the other category scores would also be satisfactory.

For each of the six groups of categories and items, the within-score inter-item covariance (C*) for all pairs of the 60 items was computed (a total of 1770 per group).1/ A systematic search was made of each of the six 60x60 matrices of C*'s in an attempt to locate clusters of items containing at least six items (10 pe cent of the group) within which all C*'s were positive and at least +.01 in value. No such cluster was found. In fact, the largest cluster of items with C*'s meeting this .01 criterion contained only four items. Attempts to account for the existence of this and other smaller clusters by examination of the content of the items were unsuccessful, which suggested that these clusters were insignificant insofar as they might affect the meaning of the total category scores.

1/

$$C^* = \frac{1}{N}\sum_{y=0}^{n} f_{y_{jk}} - \sum_{y=0}^{n}\left(\frac{f_{y_{j.}}}{\sqrt{Nf_{y\,..}}}\right)\left(\frac{f_{y_{.k}}}{\sqrt{Nf_{y\,..}}}\right) ,$$

where: items $j, k = 1,2,\ldots n$

people $i = 1,2,\ldots N$

x_{ij} = item score = 0 or 1

y_i = category score = $\sum_{j=1}^{n} x_{ij} = 0,1,2,\ldots n$

$f_{y\,..}$ = number of i having given y

$f_{y_{j.}}$ or ($f_{y_{.k}}$) = number of i having given y and

$x_{ij} = 1$ (or $x_{ik} = 1$)

$f_{y_{jk}}$ = number of i's having given y and $x_{ij}x_{ik} = 1$.

For a description of C* see Tucker, Ledyard R. "Some Experiments in Developing a Behaviorally Determined Scale of Vocabulary." Research Memorandum 55-10. (Multilithed report) Princeton, N.J.: Educational Testing Service, September 1955.

To illustrate the results of the C* analysis, Table VII-1 presents the values of C* for the clearest cluster of four items that were obtained. These four items have C*'s of .01 or larger for the category score Initiates a New Structure (odd items).

TABLE VII-1. VALUES OF C* FOR FOUR SELECTED ITEMS AND THE IN-BASKET SCORING CATEGORY INITIATES A NEW STRUCTURE

Item	A5	A15	A17	A19
A5		.03	.01	.02
A15	.03		.01	.03
A17	.01	.01		.01
A19	.02	.03	.01	

The four items in this group can be described briefly as follows:

> A5 is a memo from the assistant superintendent for business management to all principals in the system informing them of a delay in shipment of the year's supply of pencils.
>
> A15 is a copy of a mimeographed memo to parents from the president and membership chairman of the Whitman School PTA. The memo is an invitation to join, participate, and pay the annual dues (a return envelope is provided). An attached note from the principal's secretary says, "Mrs. Lackman (the membership chairman) dropped off a supply of these to be distributed to each child on opening day."
>
> A17 is a note of recommendation from the superintendent attached to a letter from Mildred Ash, an alumna of Whitman School. She indicates that she is to be married within a few months, but in the meantime, she would like part-time employment.
>
> A19 is a note from the principal's secretary attached to a copy of the previous year's September "Bulletin to Parents." The note says, "Mr. Jarrett usually sent home bulletins periodically. Attached is a copy of the one sent out during the first week of last year."

There are many hypotheses that could account for the relationships among these four items insofar as they relate to the meaning of Initiates a New Structure. First, it could be noted that all four items were from In-Basket A, but there were many other items in In-Basket A that did not appear in this cluster. It could be noted also that each of the four items posed a problem of first deciding what course of action to take before proceeding, but so did most other items not in the group of four. Or it could be noted that none of the four items was extremely urgent or needed immediate action, but again there were many other items of a less pressing nature not among the four. No satisfactory explanation for the small relationship among the four items was apparent, and it seemed best to regard such clusters as of little or no significance.

The results of the C* analyses of the five category scores gave no reason to reject adding item scores to obtain a total category score. It was therefore concluded that the meaning of a category score did not change significantly with changes in the particular set of items from which it was obtained.

Consistency of Performance

It has been shown that category scores do not require different interpretations even if they are earned on different sets of items. The reliability of category scores next were examined to determine whether those principals who showed a large amount of the behavior described by a given category on one-half of the items would also show a large amount of that behavior on the other half of the items, and,conversely,whether those principals who scored low on one-half of the items would also score low on the other items. In other words, were the principals consistent in their work on the items? This may be viewed as a question of the reliability of the in-basket category scores.

Before computing estimates of the reliability of each category score, its distribution was examined. Earlier inspection (see Table VI-3, Chapter VI) revealed that some of the categories were scored so infrequently as to raise doubts about their having any possible value. For example, a response warranting a score in the category Improves Staff occurred only 68 times out of a total of more than 30,000 opportunities. Most of the principals did nothing in working on their in-baskets that the scorers considered as improving their staff. This category was therefore eliminated from all further analyses; so were the categories Physical Values and Working Conditions which were scored almost as infrequently.

Estimates of reliability were made for the remaining 65 categories. Correlations between the odd-numbered items and the even-numbered items for each of the categories were computed. These correlations were then adjusted to correct for the reduction of one-half in number of items (Spearman-Brown correction); the resulting coefficients can be interpreted as estimates of the reliability of category scores for the full set of 132 items. Table VII-2 presents these estimated reliabilities of the 65 category scores.

The reliability estimates presented in Table VII-2 reflect three sources of unreliability. First, the reliability of the score was attenuated by any lack of agreement among the eight scorers as to how the scoring categories applied to the responses of the principals. The scoring and quality control procedures described in Chapter VI were designed to reduce this source of unreliability as

TABLE VII-2. RELIABILITY ESTIMATES FOR IN-BASKET SCORING CATEGORIES

Scoring Category	Reliability Estimate
Estimated Number of Words	.94
Number of Items Not Attempted	.97
Usual Courses of Action	.92
Rejection of Test Conditions	.59
Number of Subordinates Involved Individually	.84
Number of Subordinate Groups Involved	.69
Number of Superiors Involved	.60
Number of Outsiders Involved Individually	.73
Number of Outside Groups Involved	.44
Unusual Courses of Action	.52
Gives Recognition for Ability or Good Work	.71
Shows Awareness of Poor Work	.65
Carelessness or Minor Error	.69
Socially Insensitive	.38
Relates to Background Materials or Other Items	.75
Conceptual Analysis	.70
Prejudges, Makes Unwarranted Assumption, or Largely Inappropriate Perception	.35
Uses Human or Personal Values in Analysis	.43
Uses Physical Values in Analysis	--*
Uses Program Values in Analysis	.65
Discusses with Subordinates	.84
Discusses with Other Principals	.39
Discusses with Superiors or Outsiders	.58
Asks for Information, Opinion, Advice, or Permission from Subordinates	.81
Asks for Information, Opinion, Advice, or Permission from Superiors	.41
Asks for Information, Opinion, Advice, or Permission from Outsiders	.46
Requires Further Information	.68
Delays or Postpones Decision or Temporizes	.81
Arrives at a Procedure for Deciding	.80
Contingent Decision	.38
Concluding Decision	.78
Makes Tentative or Definite Plans Only	.92

TABLE VII-2 (Cont'd)

Scoring Category	Reliability Estimate
Work Scheduled for Same or Following Day	.77
Work Scheduled for Same or Following Week	.83
Work Scheduled: Indefinite Time or no Time Specified	.83
Takes Leading Action	.90
Takes Terminal Action	.86
Follows Lead by Subordinates	.77
Follows Lead by Superiors	.71
Follows Lead by Outsiders	.61
Follows a Pre-Established Structure	.67
Coordination	.41
Initiates a New Structure	.78
Delegates Completely	.31
Delegates Partially with Control	.24
Delegates Partially, but Without Control	.59
Gives Directions and/or Suggestions	.83
Refers to Superiors	.17
Communicates Face-to-Face	.86
Communicates by Telephone	.74
Communicates by Writing	.90
Gives Information to Subordinates	.66
Gives Information to Superiors	.24
Gives Information to Outsiders	.58
Explains Actions to Subordinates	.53
Explains Actions to Superiors	.19
Explains Actions to Outsiders	.18
Courtesy to Subordinates	.91
Courtesy to Superiors	.53
Courtesy to Outsiders	.55
Informality to Subordinates	.92
Informality to Superiors	.64
Informality to Outsiders	.00
Backs Up Teachers or Staff Officers	.06

TABLE VII-2 (Cont'd)

Scoring Category	Reliability Estimate
Improves Staff	--*
Attempts to Improve the Working Conditions of the Staff	--*
Imposes Controls: Sets a Deadline	.36
Imposes Controls: Follow-Up or Feedback Planned	.01

*Reliability estimates were not computed because of the extremely low frequency of these scores.

much as was practical, but they of course could not eliminate it completely. The second source of unreliability was that introduced by inconsistencies in the subjects' behaviors from item to item in the in-baskets. For example, a principal might work for a period of time with the intention of involving his teachers or staff in many of his discussions. Later, under the pressure of work, he might for a time forget this intention; still later, he could return to his original plan. Such inconsistencies in performance lowered the reliability of the category scores. Third, any general difference between the odd- and even-numbered sets of items reduced the reliability of the category scores.

The reliabilities of these 65 category scores shown in Table VII-2 ranged from .00 for the category Informality to Outsiders to .97 for Items Omitted. The sizes of these reliability coefficients show a definite relationship with the mean scores for the categories reported in Chapter VI (Table VI-3). Apparently the number of times the category was scored is also a substantial factor associated with the relative size of the reliability estimates. With one exception (Outside Group Involved) no category that was scored on the average for at least five of the 132 items had a reliability less than .50.

For the purpose of this study, therefore, it was concluded that the reliability of the scores for the more frequently used categories was satisfactory.

Choice of Method of Factor Analysis

Although 68 categories were utilized in the scoring procedure, some of them were expected to overlap or measure the same basic type of performance. It is likely that much of what was measured by the

68 categories could be understood in terms of a much smaller number of underlying factors. For reasons of parsimony and efficiency it would be desirable to reduce the number of variables to the number of underlying factors. A statistical method, factor analysis, 2/is available by which a matrix of intercorrelations may be systematically analyzed and more generally described in terms of a reduced matrix of loadings on major factors.

Factor analytic methods were utilized to examine the intercorrelations of 40 scoring categories selected from the entire group of 68. The major criterion guiding the selection of the 40 category scores for this analysis was the frequency with which the categories were used in scoring responses. With one exception, all category scores with a mean of less than six were eliminated from this analysis. Thus the analysis is based on a major part of the performance of the principals as it was scored and, with minor exceptions, the analysis involved those that were scored most reliably.

In planning the factor analysis of the correlations among category scores, the possibility was considered that these correlations might show artificially high relationships because of dependencies introduced by the scoring procedure. For example, the scoring rules required that a course of action that was scored "1" for the category Takes Leading Action be scored "0" for Takes Terminal Action. Scoring a course of action in the category Makes Tentative or Definite Plans Only precluded scoring several other categories, such as Takes Leading Action and Takes Terminal Action. A principal could not show

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2/ The method of factor analysis is also used extensively in other chapters to follow. For a reasonably complete and lucid discussion of the method the reader is referred to Cattell, Raymond B. Factor Analysis. New York: Harper & Brothers, 1952, p. 464, or L. L. Thurstone, Multiple-Factor Analysis, Chicago: University of Chicago Press, 1947, p. 535.

Courtesy to Subordinates without involving subordinates either as individuals or as a group. Such dependencies, under certain conditions, could introduce artificial relationships into the intercorrelations. These correlations could then be explained in terms of the rules established for scoring rather than in terms of relationships having any basis in the performance of the principals.

There are reasons, however, why these possible artificial dependencies might have little effect upon the correlations between category scores. First, some items were scored for more than a single course of action. When more than a single course of action was taken in response to an item, it was possible for that item to receive scores on categories that would otherwise be mutually exclusive. If two courses of action were taken, for example, one could be scored for the category Work Scheduled for the Same or Following Day and the other for Work Scheduled: Indefinite Time or No Time Specified, but if only a single course of action were taken scoring one of these categories precluded scoring the other. Second, category scores were obtained by summing over the total number of items. If these scores did not approach the maximum possible score (132 for most categories) an individual could obtain relatively large scores for both of two mutually exclusive categories by achieving them from different items. Category scores were rarely so large as to preclude the earning of large scores on other categories. Thus, for example, the largest observed score, 47, for the category Takes Terminal Action, and the largest observed score, 41, for Delays or Postpones Decision or Temporizes, two obviously mutually exclusive categories, could have been earned by the same principal and with a leeway of 44 items.

There is yet another problem to be considered relative to the independence versus dependence of category scores. This problem was introduced by the time limit (2 hours and 15 minutes) which was imposed on the principals in their work on each of the in-basket tests. If a principal chose to spend a major part of his time on one or two of the more complicated items, his performance on the remaining items would undoubtedly have been affected.

The original plan for the factor analysis contemplated using a special factor analysis method, the inter-battery method,[3] as a means of reducing the possible influence of any artificial dependencies introduced by scoring. With this method the matrix to be factored would contain the correlations of the 40 category scores obtained from the odd-numbered items with the same 40 category scores obtained from the even-numbered items.

This 40x40 matrix is the off-diagonal, nonsymmetrical, submatrix of a larger 80x80 matrix composed of the intercorrelations among 80 scores made up of the 40 category scores on odd items and the same 40 category scores on even items. The correlations in this off-diagonal matrix are between scores that have been assigned by different scorers and that are based on different sets of 66 items. By using these correlations in an inter-battery factor analysis, the effects of the differences in how the scoring rules were applied by the two sets of scorers and the artificial dependencies introduced by the scoring definitions and procedures might be reduced.

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[3] Tucker, Ledyard R. An inter-battery method of factor analysis. Psychometrica, 1958, 23, 111-136.

The complete 80x80 matrix contains information which permitted an examination of the extent to which the correlations between categories were actually affected. This complete matrix contains, in addition to the off-diagonal correlations mentioned above, the intercorrelations among the 40 category scores based on even items alone and those among the 40 scores based on odd items alone.

The effects of a consistent bias in the work of a scorer would be to produce in the off-diagonal matrix (odd vs. even items) correlations that were smaller than those in either of the diagonal matrices (odd vs. odd, and even vs. even items). The dependency effects introduced by scoring rules would produce, in the off-diagonal matrix, correlations that might be either larger or smaller, depending on the effect of a particular definition or scoring rule. As has been shown, there is reason to believe that these effects would be minor.

An effort was made to determine how large the differences between correlations found in the diagonal and off-diagonal matrices were. Taking one in-basket scoring category at a time, its correlation with each of the remaining 39 in-basket scoring categories in the off-diagonal matrix was plotted against its correlation with the same category in each of the two diagonal matrices (a total of 78 points was plotted). Figure VII-1 shows a plot of the correlations of the scoring category Initiates a New Structure with each of the other 39 categories. Each point plotted with an "x" is the correlation from the "even vs. even" matrix (on the vertical axis) plotted against the corresponding correlation in the off-diagonal matrix (on the horizontal axis). Each point plotted with an "o" represents an "odd vs. odd" correlation against its corresponding correlation in the off-diagonal matrix.

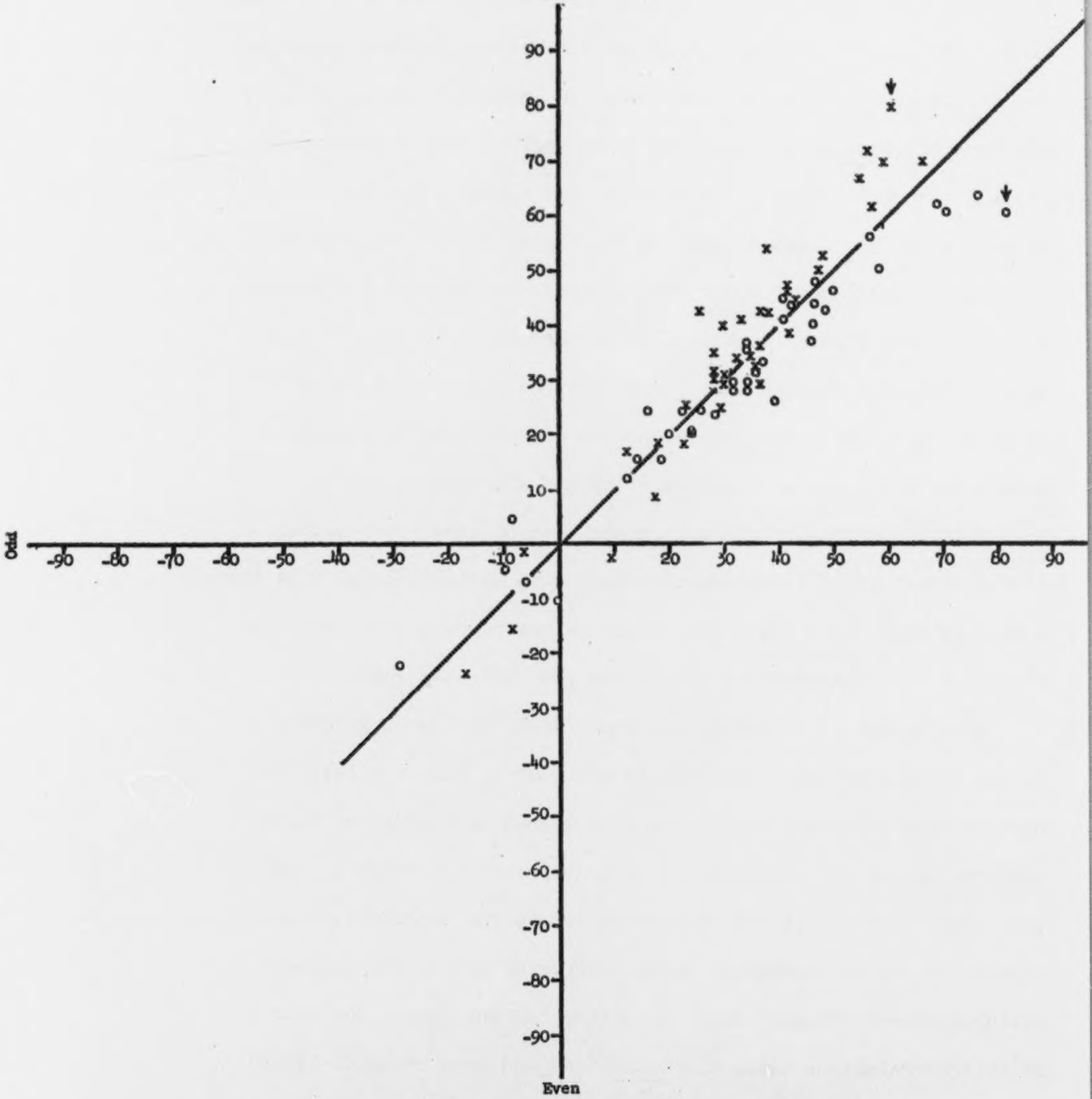

Figure VII-1. Correlations in the Off-Diagonal Matrix Plotted Against Correlations in the Two Diagonal Matrices for the In-Basket Scoring Category Initiates a New Structure.

Figure VII-1 shows quite clearly that for the category score Initiates a New Structure the general size and pattern of its correlations with other category scores are not heavily dependent upon the specific sample of items scored, although there is a small tendency for the off-diagonal correlations to be smaller than their corresponding diagonal values as is shown by the tendency for the x's to fall above the diagonal line in the figure and for the o's to fall below this line of equal correlation. One pair of the points plotted in the figure (indicated by the arrows on the plot) is of special interest because they illustrate the effect of a specific scoring rule. The points represent the correlations between the categories Discusses with Subordinates and Initiates a New Structure. The deviation of these points from the line of equal correlations (the diagonal line) is apparently associated with a scoring rule that specified that Initiates a New Structure was to be scored each time Discusses with Subordinates was scored (but not vice versa).

Each of the 40 in-basket scoring categories was examined in a manner similar to that indicated by the plot of Figure VII-1. The results suggested that little would be gained by basing the factor analysis on the off-diagonal matrix of correlations between "odd" and "even" scores. It was decided to ignore the apparently minor effects of forced dependency among categories and to use the more reliable scores obtained from all items, odd and even. The matrix of intercorrelations among the total (odd and even items combined) category scores was then computed for use in a regular factor analysis rather than an inter-battery analysis. The results of the analysis should accordingly be more stable and dependable.

Table VII-3 presents the intercorrelations among the total

TABLE VII-3. INTERCORRELATIONS AMONG 40 IN-BASKET SCORING CATEGORIES

Category	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
1. Number of Words																																								
2. Items Omitted	-67																																							
3. Usual Actions	81	-67																																						
4. Subordinates Involved	68	-49	67																																					
5. Subordinate Groups Involved	57	-50	67	38																																				
6. Superiors Involved	48	-29	44	35	19																																			
7. Outsiders Involved	61	-42	73	49	43	43																																		
8. Unusual Actions	52	-31	41	58	43	35	34																																	
9. Aware of Poor Work	39	-31	47	34	24	22	22	30																																
10. Careless	01	17	-15	-05	-04	00	-01	-01	-19																															
11. Relates to Other Materials	51	-24	52	54	31	43	39	39	28	-10																														
12. Conceptual Analysis	34	-21	40	29	26	17	34	29	36	-02	28																													
13. Program Values	25	-22	28	19	18	11	25	18	26	04	12	79																												
14. Discusses with Subordinates	55	-49	67	52	56	21	42	34	29	-16	44	25	17																											
15. Discusses with Superiors	52	-36	61	40	57	47	56	56	32	-07	58	28	18	52																										
16. Asks Subordinates	53	-51	61	52	41	20	35	40	34	-14	45	39	22	45	52																									
17. Requires Information	50	-36	57	44	39	16	27	33	30	-22	36	29	18	58	58	71																								
18. Delays	-04	-22	-15	-14	-10	-26	-22	-14	-05	-20	-15	-03	-02	00	-13	-08	00																							
19. Decides on Procedure	64	-55	69	60	48	32	47	41	37	-18	51	32	20	81	52	63	77	-05																						
20. Concluding Decision	27	-50	25	12	21	22	25	11	04	09	-08	-07	06	-19	04	-18	-30	-25	-24																					
21. Plans Only	10	-35	29	-14	33	02	17	-06	15	-26	02	05	05	36	16	13	35	18	32	-02																				
22. Immediate Work Scheduled	45	-41	44	42	36	16	-22	23	09	-16	41	16	09	58	26	38	50	15	63	-17	30																			
23. Intermediate Work Scheduled	35	-22	33	39	21	20	22	19	14	-08	38	25	13	41	27	33	37	08	48	-24	08	54																		
24. Indefinite Work Scheduled	36	-48	55	19	41	17	38	20	35	-18	10	20	17	47	43	36	48	03	48	09	61	05	-20																	
25. Leading Action	60	-34	49	71	24	33	33	49	26	03	41	25	15	40	40	45	35	-13	53	03	-52	30	35	03																
26. Terminal Action	00	-19	-13	-02	-13	07	-02	-06	-15	23	-19	-15	-01	-44	-22	-37	-50	-19	-44	78	-41	-36	-35	-31	-02															
27. Follows Subordinates	46	-68	53	33	43	15	44	17	02	-02	12	09	11	29	21	14	16	-09	25	60	27	19	02	34	13	35														
28. Follows Superiors	62	-65	63	52	45	41	46	29	28	-04	29	13	15	36	38	27	24	-17	44	50	14	31	21	32	41	20	53													
29. Follows Outsiders	50	-34	51	32	36	31	62	21	01	05	20	18	17	26	39	16	19	-24	28	36	10	17	08	27	27	13	47	44												
30. Follows Structure	40	-41	32	60	25	15	13	39	15	-05	28	08	07	22	12	16	16	-03	33	23	-13	38	35	-03	49	12	23	38	11											
31. Initiates Structure	66	-53	77	69	59	29	53	44	41	-12	49	39	22	85	50	56	56	-12	79	-02	20	51	39	44	55	-27	36	47	33	32										
32. Directs	66	-43	55	81	35	31	40	53	35	02	43	33	23	36	35	39	28	-13	49	18	-35	32	36	05	80	10	23	47	29	65	55									
33. Communicates Face-to-Face	62	-58	75	55	59	30	50	35	36	-16	48	25	19	89	60	44	56	-06	81	-02	39	60	44	51	44	-38	37	49	39	33	80	42								
34. Communicates by Telephone	40	-35	50	25	37	22	45	23	20	-25	35	09	09	49	41	29	40	-04	47	01	38	43	22	32	12	-24	20	28	30	16	43	18	49							
35. Communicates by Writing	57	-45	43	67	21	33	36	41	13	18	23	17	14	16	25	24	11	-20	30	42	-49	15	18	00	79	41	36	54	33	51	39	76	23	-07						
36. Informs Subordinates	60	-37	55	53	48	28	37	46	20	-01	42	27	10	30	23	45	28	-13	38	19	-13	27	21	17	53	04	31	30	28	41	44	53	36	20	52					
37. Informs Outsiders	43	-20	47	23	29	22	51	20	12	05	22	22	17	16	26	23	14	-20	14	28	01	08	08	19	24	09	25	30	42	09	24	27	22	27	26	36				
38. Courtesy to Subordinates	36	-10	23	50	13	12	15	36	09	09	30	12	02	26	17	25	21	02	31	-15	-40	24	30	-08	62	-09	-05	18	12	40	30	58	27	07	50	34	07			
39. Courtesy to Outsiders	41	-14	31	18	20	13	29	16	13	18	14	23	21	15	22	20	14	-07	16	09	-25	03	10	04	40	06	11	22	26	09	21	33	20	03	35	22	46	34		
40. Informality to Subordinates	32	-30	34	45	10	17	19	21	12	-22	33	01	-02	24	21	26	19	-06	30	12	-10	24	10	09	39	06	23	29	18	31	29	38	27	17	36	31	07	30	06	

category scores for the 40 categories (decimal points are omitted; means and standard deviations have been presented in Table VI-3). These are the correlations used in the factor analysis.

Major Factors In In-Basket Test Performance

The correlations between the category scores range from a high value of .89 between Discusses with Subordinates and Communicates Face-to-Face to a negative value of -.68 between Items Omitted and Follows Subordinates. The category score for Items Omitted is negatively related to all the other categories except Careless. Terminal Action also shows a general negative relationship to all other categories with the very noticeable exception of Concluding Decision with which it correlates .78. Table VII-3 shows a pattern of complex relationships between category scores which can best be described by the results of the factor analysis.

The factor analysis proceeded in a straightforward manner. First, the communality of each category score was estimated as equal to its largest correlation with another category score. Characteristic roots and vectors of the matrix of intercorrelation were then obtained. (Computing was done with the aid of a high-speed computer.) Table VII-4 lists in order of size the 12 positive roots that exceed the absolute value of the largest negative root (-.35). Inspection of the order and size of the roots suggested either five or eight factors. A noticeable, although small, change in the rate of decrease of size of roots can be seen at both these points. Eight factors were retained, since it appeared more desirable to work with an excess of factors than with too few. Factor loadings on

TABLE VII-4. CHARACTERISTIC ROOTS EXCEEDING THE VALUE OF THE LARGEST NEGATIVE ROOT

Order	Roots	Decrease
I	13.16	
II	4.20	8.96
III	3.10	1.10
IV	1.78	1.32
V	1.26	.52
VI	.95	.31
VII	.83	.12
VIII	.73	.10
IX	.58	.15
X	.51	.07
XI	.46	.05
XII	.36	.10
.		
.		
.		
XL	-.35	(Largest Negative Root)
Total	26.34	

eight factors were computed for each of the 40 category scores. The resulting orthogonal factor matrix is presented as Table VII-5. A distribution of the residual correlations is given as Table VII-6.

The large majority (91 per cent) of the residual correlations are within the range of ±.05. Thus, eight factors account for most of the variance in scores shared in common by the 40 categories. A comparison of the communalities (h^2 in Table VII-5) of each category score with the estimate of its reliability (Table VII-1) suggested that the eight factors also account for all the reliably measured variance of most of the categories. Notable exceptions are the categories Careless, Delays, Courtesy to Subordinates, and Informality to Subordinates, which have substantial variance that cannot be attributed to unreliability and that is not shared by other categories. Excepting these categories and excepting the possibility that one or more of the 25 categories not included in the analysis might introduce other factors, it appears that eight factors are all that are needed to account for performance on the in-basket tests.

A rotation was made of the orthogonal factor matrix to obtain an oblique factor matrix showing simple structure. The transformation matrix desired was determined by the application of graphical methods. Table VII-7 presents the transformation matrix and Table VII-8 the resulting oblique factor matrix. (Table VII-8 also contains loadings for second-order factors, to be discussed later.)

Only a tentative interpretation of the eight first-order factors will be made at this time. Later (in Chapters XII and XIII) the relationships between each factor and many other variables will be examined. These relationships will do much to illuminate the

TABLE VII-5. ORTHOGONAL FACTOR MATRIX

Category	I	II	III	IV	V	VI	VII	VIII	h^2
1. Number of Words	87	-15	08	03	02	02	05	-10	80
2. Items Omitted	-68	06	-38	28	33	-01	-06	-04	81
3. Usual Actions	91	06	23	07	04	-05	-01	-06	90
4. Subordinates Involved	80	-24	-25	-12	-07	-10	-11	01	80
5. Subordinate Groups Involved	64	11	24	00	-02	04	17	-17	54
6. Superiors Involved	46	-15	10	11	22	-05	-38	09	46
7. Outsiders Involved	67	-07	30	24	29	11	-08	00	70
8. Unusual Actions	58	-14	-15	07	-03	-19	-11	-11	44
9. Aware of Poor Work	44	12	-01	18	-21	-30	-18	11	42
10. Careless	-11	-31	-03	19	12	16	18	08	22
11. Relates to Other Materials	59	05	-20	03	15	01	-31	-13	53
12. Conceptual Analysis	43	08	-07	63	-43	13	-09	-01	80
13. Program Values	30	01	05	59	-51	22	-08	10	77
14. Discusses with Subordinates	75	43	-04	-13	07	10	15	24	86
15. Discusses with Superiors	62	12	09	16	25	-04	-15	26	59
16. Asks Subordinates	64	23	-20	16	-04	-23	08	-31	68
17. Requires Information	63	46	-15	02	-03	-16	14	-16	70
18. Delays	-12	25	-08	-19	-30	09	16	-02	24
19. Decides on Procedure	82	36	-16	-10	-02	-03	05	09	85
20. Concluding Decision	16	-62	65	-13	-11	-01	-09	-02	87
21. Plans Only	16	68	52	-13	-10	03	-05	-07	79
22. Immediate Work Scheduled	56	30	-18	-31	-06	36	-05	-13	69
23. Intermediate Work Scheduled	45	17	-36	-10	-03	41	-16	-05	57
24. Indefinite Work Scheduled	46	38	43	09	-05	-38	17	11	73
25. Leading Action	68	-38	-46	01	06	-09	12	13	87
26. Terminal Action	-17	-79	36	-10	-13	03	-06	01	82
27. Follows Subordinates	47	-21	57	-21	-13	09	15	-06	68
28. Follows Superiors	65	-24	31	-16	-04	02	-06	11	62
29. Follows Outsiders	49	-19	36	13	28	19	06	00	54
30. Follows Structure	48	-31	-22	-35	-22	09	-11	-07	58
31. Initiates Structure	84	18	-05	-03	00	-02	08	15	78
32. Directs	72	-43	-33	-03	-11	-03	-03	05	83
33. Communicates Face-to-Face	82	33	06	-14	08	12	06	24	88
34. Communicates by Telephone	49	31	17	-07	18	10	-17	-10	45
35. Communicates by Writing	57	-69	-15	-07	-06	-05	12	11	86
36. Informs Subordinates	60	-25	-09	01	01	-10	07	-35	57
37. Informs Outsiders	40	-19	23	31	25	12	10	-23	48
38. Courtesy to Subordinates	41	-26	-54	-06	08	02	18	06	57
39. Courtesy to Outsiders	33	-26	-07	33	14	13	33	01	43
40. Informality to Subordinates	40	-16	-11	-26	01	-17	-11	-04	31

TABLE VII-6. DISTRIBUTION OF RESIDUAL CORRELATIONS

Value of Residuals	Frequency
.11 to ---	3
.09 to .10	1
.07 to .08	8
.05 to .06	17
.03 to .04	75
.01 to .02	161
.00 to .00-	226
-.01 to -.02	161
-.03 to -.04	86
-.05 to -.06	24
-.07 to -.08	12
-.09 to -.10	3
-.11 to ---	3
Total	780

TABLE VII-7. FINAL TRANSFORMATION MATRIX

	A	B	C	D	E	F	G	H
I	.18	.34	.27	.06	.15	.06	.05	.12
II	.03	.36	-.46	.02	-.07	.00	-.06	-.50
III	.03	.30	.44	.01	.10	-.16	.20	-.53
IV	.13	-.12	-.50	.57	.26	-.28	.31	.07
V	.06	.03	-.51	-.73	.56	.01	.47	.11
VI	-.33	-.18	-.01	.22	-.04	.77	.53	.03
VII	.15	.43	.00	-.22	-.75	-.40	.59	.45
VIII	-.90	.65	-.15	.20	.15	-.37	-.13	.49

TABLE VII-8. OBLIQUE FACTOR MATRIX

Category	First Order Factors								Second Order Factors	
	A	B	C	D	E	F	G	H	X	Y
1. Number of Words	24	22	33	03	11	06	14	11	36	67
2. Items Omitted	-04	-40	-68	-12	16	-02	09	10	-20	-43
3. Usual Actions	25	36	27	05	20	-02	11	-07	38	66
4. Subordinates Involved	11	10	31	03	13	08	-18	28	47	57
5. Subordinate Groups Involved	29	29	26	-01	-05	03	21	-12	29	44
6. Superiors Involved	-01	03	06	02	54	06	-07	-02	08	44
7. Outsiders Involved	13	21	08	01	41	04	31	03	10	60
8. Unusual Actions	24	00	15	06	16	-02	-13	11	32	47
9. Aware of Poor Work	06	21	06	28	15	-23	-31	-05	26	31
10. Careless	-09	-08	-07	01	-01	-03	30	31	-23	04
11. Relates to Other Materials	18	-06	-02	-01	37	25	-09	-04	45	41
12. Conceptual Analysis	08	-01	-05	75	04	00	01	00	24	38
13. Program Values	-07	02	05	82	-02	00	02	00	08	29
14. Discusses with Subordinates	-10	62	-02	-03	01	01	10	08	60	31
15. Discusses with Superiors	-09	39	-09	03	42	-09	07	06	26	45
16. Asks Subordinates	50	10	-03	04	-02	-08	-03	-05	56	42
17. Requires Information	34	31	-07	-01	-09	-06	-01	-10	63	28
18. Delays	-05	08	07	08	-38	07	-09	-08	15	-26
19. Decides on Procedure	07	46	03	02	03	02	-05	06	69	39
20. Concluding Decision	02	-01	73	02	09	-03	03	-08	-51	36
21. Plans Only	08	40	08	04	-03	03	-02	-67	16	-08
22. Immediate Work Scheduled	05	11	14	-03	-06	50	03	-09	61	17
23. Intermediate Work Scheduled	-06	-06	-04	11	08	51	02	07	54	16
24. Indefinite Work Scheduled	16	63	10	03	-01	-48	-02	-24	15	27
25. Leading Action	03	10	10	-03	06	-05	01	64	41	53
26. Terminal Action	-09	-25	59	03	01	00	00	14	-62	15
27. Follows Subordinates	10	29	65	-03	-11	02	16	-13	-10	39
28. Follows Superiors	-02	29	50	01	14	03	00	05	09	51
29. Follows Outsiders	07	20	17	-07	26	06	41	03	-05	48
30. Follows Structure	03	-09	48	01	-08	30	-23	20	32	30
31. Initiates Structure	03	48	11	05	07	-04	03	14	54	49
32. Directs	06	02	31	11	06	07	-10	47	37	57
33. Communicates Face-to-Face	-11	60	09	-02	10	06	09	05	55	40
34. Communicates by Telephone	14	19	03	-09	26	20	06	-30	32	27
35. Communicates by Writing	00	03	45	00	-01	-05	02	59	07	55
36. Informs Subordinates	45	-09	28	-08	01	07	07	10	29	52
37. Informs Outsiders	31	-02	05	-02	20	04	44	01	-04	47
38. Courtesy to Subordinates	01	01	-03	-10	-07	05	06	57	38	27
39. Courtesy to Outsiders	10	09	-06	06	-03	-10	44	40	03	36
40. Informality to Subordinates	10	03	27	-16	09	04	-22	09	24	27

nature of the factors.

Factor A has loadings exceeding +.25 for the following six in-basket category scores:

16.	Asks for Information, Opinion, Advice, or Permission from Subordinates	.50
36.	Gives Information to Subordinates	.45
17.	Requires Further Information	.34
37.	Gives Information to Outsiders	.31
5.	Number of Subordinate Groups Involved	.29
3.	Usual Courses of Action	.25

This factor quite clearly relates to the exchange of information (asking for information, giving information, and noting that information is required). The exchange does not appear to be oriented exclusively toward any particular class of associates, such as subordinates. The factor has been named Exchanging Information.

Factor B has loadings of +.25 and above on the following 14 category scores:

24.	Work Scheduled: Indefinite Time or no Time Specified	.63
14.	Discusses with Subordinates	.62
33.	Communicates Face-to-Face	.60
31.	Initiates a New Structure	.48
19.	Arrives at a Procedure for Deciding	.46
21.	Makes Tentative or Definite Plans Only	.40
15.	Discusses with Superiors or Outsiders	.39
3.	Usual Courses of Action	.36
17.	Requires Further Information	.31
5.	Number of Subordinate Groups Involved	.29
27.	Follows Lead by Subordinates	.29
28.	Follows Lead by Superiors	.29
26.	Takes Terminal Action	-.25
2.	Number of Items Not Attempted	-.40

This factor appears to be related to making definite plans for face-to-face discussions with the appropriate persons before taking final action on a problem. It may represent one of the most frequently used ways of clarifying problems and preparing for their solution. The work scheduled (Category 24) is likely to involve a plan for an informal meeting or discussion as a procedure for deciding (Category 19). Actual face-to-face discussions are not immediately available to the principals as responses to the in-basket items, and must therefore be reported as plans in their written responses to the material. This factor has been entitled Discussing with Others before Acting (Discussing before Acting).

Factor C has loadings in excess of ±.25 for 14 category scores as follows:

20.	Concluding Decision	.73
27.	Follows Lead by Subordinates	.65
26.	Takes Terminal Action	.59
28.	Follows Lead by Superiors	.50
30.	Follows a Pre-Established Structure	.48
35.	Communicates by Writing	.45
1.	Estimated Number of Words	.33
4.	Number of Subordinates Involved Individually	.31
32.	Gives Directions and/or Suggestions	.31
36.	Gives Information to Subordinates	.28
3.	Usual Courses of Action	.27
40.	Informality to Subordinates	.27
5.	Number of Subordinate Groups Involved	.26
2.	Number of Items Not Attempted	-.68

There appear to be three closely interrelated facets to Factor C: (1) making final decisions, (2) complying with suggestions made by others, and (3) taking terminal action. It should be noted that omitting an item can be a type of non-compliance. It is interesting also that decisions and actions taken on in-basket materials tend to be communicated by writing. This again may be a reflection of the restrictions upon responses which are inherent in in-basket tests. This factor is called Complying with Suggestions Made by Others (Complying with Suggestions).

There are only three category scores with loadings above ±.25 for Factor D:

13.	Uses Program Values in Analysis	.82
12.	Conceptual Analysis	.75
9.	Shows Awareness of Poor Work	.28

PRECEDING PAGE MISSING

This factor relates to directing the work of others toward solutions of problems and certainly goes beyond planning. It is interesting to note that showing courtesy loads on this factor and that writing rather than telephoning is the preferred means of communication. This factor was given the name, Directing the Work of Others (Directing Others).

The interpretations of the eight factors have been restricted to their more general or obvious features. Their full meaning will become clearer as their relationships with the other variables of the study are examined.

Second-Order Factors

The eight factors (A thru H) are not entirely independent of one another. Table VII-9 presents the intercorrelations between these eight factors.

The largest positive correlation is between Factors B and F (.70). This correlation reflects the fact that planned face-to-face discussions offer opportunity to schedule work for the future (perhaps, requires it). The positive correlation (.65) between Exchanging Information (Factor A) and Discussing with Others (Factor B) demonstrates that they have in common a general process of communication. Responding to Outsiders (Factor G) and Complying with Suggestions (Factor C) tend to go together (r = .35) and to show negative relationships with most other factors (A, B, F, and H).

The intercorrelations between the oblique factors presented in Table VII-9 were themselves factored to examine the possibility of meaningful second-order factors. Characteristic roots and vectors and the orthogonal factor matrix were computed after a preliminary

TABLE VII-9. INTERCORRELATIONS BETWEEN FIRST-ORDER FACTORS

Factor	A	B	C	D	E	F	G	H
A	1.00	.65	-.15	.37	.29	.53	-.38	.57
B	.65	1.00	-.19	.26	.22	.70	-.39	.36
C	-.15	-.19	1.00	-.02	.33	-.28	.35	.00
D	.37	.26	-.02	1.00	.20	.17	.03	.21
E	.29	.22	.33	.20	1.00	.04	.07	.29
F	.53	.70	-.28	.17	.04	1.00	-.44	.44
G	-.38	.39	.35	.03	.07	-.44	1.00	-.36
H	.57	.36	.00	.21	.29	.44	-.36	1.00

analysis. The largest correlation with another factor was used as an estimate of communality in the preliminary study, but in the final study communalities estimates were based upon the communality determined in the preliminary analysis (the results of the preliminary analyses were similar to those of the final analyses and are not reported). Inspection of the size of the characteristic roots suggested that we retain two factors. The unrotated and rotated orthogonal factor matrices are given in Table VII-10 and Table VII-11 shows the residual correlations.

The diagonal values in the table of residual correlations show the part of the total variance of each factor which is not shared with the two second-order factors and can be regarded as the unique content of the factor. Thus, Factor D is most nearly independent of the second-order factors, while Factor A in contrast has but a small part of its variance which is not also included in one or the other of the two second-order factors.

The saturation of each scoring category with the two second-order factors was determined and used in interpreting the second-order factors. These saturations are listed as columns X and Y of Table VII-8.. Factor X has loadings of +.25 or above for Factor A, Exchanging Information; B, Discussing with Others before Acting; F, Organizing Work, and H, Directing the Work of Others; and substantial negative loadings for G, Responding to Outsiders, and C, Complying with Suggestions Made by Others. The following categories are saturated ±.50 with Factor X:

19.	Arrives at a Procedure for Deciding	.69
17.	Requires Further Information	.64
22.	Work Scheduled for Same or Following Day	.61
14.	Discusses with Subordinates	.60

16.	Asks for Information, Opinion, Advice, or Permission from Subordinates	.56
33.	Communicates Face-to-Face	.55
31.	Initiates a New Structure	.54
23.	Work Scheduled for Same or Following Week	.54
20.	Concluding Decision	-.52
26.	Takes Terminal Action	-.62

This factor is bipolar with negative loadings on Factor G and C and on category scores Concluding Decisions and Takes Terminal Action. It has positive loadings on factors and categories indicating discussion, getting information, and scheduling work for the future. This factor clearly reflects preparation for making decisions before taking action vs. immediately responding with a final decision, and terminal action. Factor X was entitled Preparation for Decision vs. Taking Final Action (Preparation for Decision).

Factor Y has loadings of ±.25 on all factors except F, Organizing Work and G, Responding to Outsiders. The following nine categories are saturated ±.50 with Factor Y:

1.	Estimated Number of Words	.67
3.	Usual Courses of Action	.65
7.	Number of Outsiders Involved Individually	.60
32.	Gives Directions and/or Suggestions	.57
4.	Number of Subordinates Involved Individually	.57
35.	Communicates by Writing	.56
25.	Takes Leading Action	.53
36.	Gives Information to Subordinates	.52
28.	Follows Lead by Superiors	.51

This factor has small negative loadings on the categories Items Not Attempted (-.43), Delays, or Postpones Decision, or Temporizes (-.26), and Makes Tentative or Definite Plans Only (-.08). It appears to be an over-all output of work or productivity factor. It saturates 33 of the 40 category scores to the extent of +.25 and has been labeled Amount of Work Expended in Handling the Item (Amount of Work).

TABLE VII-10. SECOND-ORDER ORTHOGONAL FACTOR MATRICES

Oblique Factor	Unrotated		Rotated		h^2
	X	Y	X	Y	
1. Factor A	.83	.19	.66	.54	.73
2. Factor B	.79	-.01	.71	.34	.62
3. Factor C	-.25	.55	-.47	.38	.37
4. Factor D	.32	.25	.17	.36	.16
5. Factor E	.23	.59	-.05	.63	.40
6. Factor F	.77	-.21	.78	.16	.63
7. Factor G	-.53	.35	-.63	.08	.40
8. Factor H	.61	.20	.46	.45	.41

TABLE VII-11. OBLIQUE FACTOR RESIDUAL CORRELATION MATRIX

Oblique Factor	1	2	3	4	5	6	7	8
1. Factor A	.27	.00	-.05	.06	-.01	-.07	-.01	.03
2. Factor B	.00	.38	.01	.02	.04	.09	.03	-.12
3. Factor C	-.05	.01	.63	-.08	.06	.03	.02	.04
4. Factor D	.06	.02	-.08	.84	-.02	-.02	.11	-.03
5. Factor E	-.01	.04	.06	-.02	.60	-.01	-.02	.03
6. Factor F	-.07	.09	.03	-.02	-.01	.37	.03	.02
7. Factor G	-.01	.03	.02	.11	-.02	.03	.60	-.11
8. Factor H	.03	-.12	.04	-.03	.03	.02	-.11	.59

At the level of abstraction represented by the second-order factors, the administrative performance of the principals in the in-basket test situation can be described by reference to (1) the amount of preparation that is planned or contemplated as preliminary to making final decisions and taking terminal actions, and (2) the amount of work that is expended in the process of handling the items. A more complete picture is provided if there is added eight first-order factors covering (a) exchanging information, (b) discussing problems with others before acting, (c) complying with suggestions made by others, (d) making analyses of the situations, (e) maintaining organizational relationships, (f) organizing work (g) responding to outsiders, and (h) directing the work of others. In the chapters to follow, both levels of description will be considered.

Summary

In this chapter, the complex record of the principal's performance on the in-basket test has been studied. The properties of the scoring categories have been examined. First, the assumptions involved in adding across items to obtain total scores for a category was questioned. It was shown that such scores are not made ambiguous by shifts in meanings associated with the set of items from which they are earned. Category scores were found to be reliable in that they reflect consistent individual differences in performance. A factor analysis of the intercorrelations between 40 of the most used categories resulted in the finding of eight first-order and two second-order factors. These factors are interpreted as basic concepts of administrative performance in the in-basket test situations.

CHAPTER VIII

THE CONTENT SCORES OF THE IN-BASKET TEST

The method developed for obtaining scores based on content rather than on style of the principals' responses to in-basket problems was described in Chapter VI. To review briefly: the score sheet provided a place for recording up to 10 courses of action which a principal might take in his response to each in-basket problem. Courses of action were stated in such terms as "refer to secretary," "make inventory of pencils," or "clarify responsibility of custodian." Certain of these courses of action were chosen to form scoring keys for content score categories. One content score, the Imaginative score, included courses of action judged to be "good ideas" which went beyond actions immediately suggested by the stimulus materials--actions which to some degree were creative or imaginative solutions to the problem. "Make inventory of pencils" was keyed for the Imaginative score because it is an action which was not suggested by anything in the stimulus materials; it is a good idea which the principal had to think of himself. A second content score, the Organizational Change score, included in its key all courses of action judged to involve changing the organization--by changing personnel, duties, or practices. For example, "clarify responsibility of custodian" was keyed for Organizational Change. The content score for the Imaginative content score is the number of courses of action taken by a principal which were keyed as imaginative; similarly, the Organizational Change score is the number of courses of action taken which were keyed for organizational change.

Most of the methods of scoring in-basket responses have emphasized description rather than evaluation. The Imaginative content score is an exception; it contains a definite element of evaluation of the principals' behavior. Only those courses of action that were judged to be good ideas were keyed for imaginativeness. An idea which might be unusual or clever was not keyed unless it was also a good solution to the problem posed by the item. The Imaginative content score is thus the number of good ideas the principal thought of. Imaginativeness will be of special interest insofar as it implies an evaluation of the quality of a principal's in-basket behavior which is based solely on the content of his action.

This chapter will be concerned primarily with the relationships of the two content scores to other measures obtained in the study. But first some characteristics of the content scores themselves will be discussed.

Reliability of Content Scores

The reliability of the content scores is reported in Table VIII-1. The odd-even reliability coefficients are based on correlations between odd- and even-numbered in-basket items, except that there was some rearrangement of items to produce half-tests which were more nearly equal with respect to number of items, i.e., number of courses of action keyed for the content score. The correlations are of course corrected for double length. Kuder-Richardson formula #21 was used to give estimates of reliability which are independent of any particular division of problems into half-tests.

Both scores are reliable enough for use in correlational analysis. For the Imaginative score, the Kuder-Richardson reliabilities and

TABLE VIII-1. MEANS, STANDARD DEVIATIONS, AND RELIABILITY OF CONTENT SCORES

Score		Maximum Possible Score	Mean	S.D.	Reliability Odd-Even	Reliability K-R #21
Imaginative	All In-baskets	170	13.26	5.90	.68	.70
	BB In-Basket	83	4.65	2.95	.58	.57
Organizational Change	All In-baskets	70	5.88	2.92	.61	.48
	BB In-basket	42	2.96	2.18	.63	.53

odd-even reliabilities are essentially the same; but for Organizational Change the Kuder-Richardson formula gives lower reliabilities, presumably because of lack of homogeneity of the items. Reliability of the Organizational Change score is lower than for Imaginative, no doubt because it is a much "shorter" test (70 as compared with 170 items, in the case of all in-baskets combined). In the case of the Imaginative score, the Bureau of Business In-Basket is somewhat less reliable than all four in-baskets combined, as might be expected on the basis of test length. The reliability of Organizational Change is greater for the Bureau of Business alone than for all four in-baskets; apparently the Bureau of Business problems provide a more homogeneous set of opportunities for this kind of behavior to be exhibited.

The differences in means reflect the number of courses of action keyed for each score. Comparison with the maximum score possible shows that in general the courses of action keyed for both Imaginative and Organizational Change occur quite rarely. The Bureau of Business In-Basket contributes to both content scores to an extent which is out of proportion to the number of items it contains.

The correlation between the Imaginative score and Organizational Change score is .53. Since 56 percent of the organizational change items were also keyed for imaginative score, a spuriously high correlation between them is to be expected.

Correlations of Content Scores with Other Characteristics of Principals

In this section, the correlations of the two content scores with other measures obtained from the 232 principals will be presented.

The content scores are based on all four in-baskets. A correlation of .17 is significant at the .01 level; in the following discussion attention will be focussed upon variables having correlations of ±.20 or higher with content scores.

Correlations with Biographical Data

The corrèlations of content scores with biographical information, shown in Table VIII-2, are all very low and mostly nonsignificant. Apparently there is no consistent tendency for imaginativeness or tendency to produce organizational changes to be related to age, experience, or years of academic preparation.

Correlations with Basic Mental Ability and Professional and General Knowledge Scores

There is a marked tendency for the content scores to correlate with a variety of cognitive measures, as is shown in Table VIII-3. In the case of the Imaginative score, all the correlations shown are significant. The best of the basic ability tests insofar as predicting imaginativeness may be concerned are the fluency (r = .40, .26, .38, and .39) and verbal knowledge test (r = .46) but both number facility tests and the flexibility of closure test have correlations of .35 with imaginativeness. Reasoning tests (r = .30, .34, and .27) and speed of closure tests (r = .32 and .25) are next highest, and memory tests have low correlations (r = .17 and .25). These relationships appear to be consistent with the notion that the Imaginative score does reflect a certain amount of "goodness" in problem solving.

The most striking findings, however, are the high correlations with the tests of professional knowledge (r = .65 and .63). The correlation of .65 with the Administration and Supervision Test is almost

TABLE VIII-2. CORRELATIONS OF TWO CONTENT SCORES WITH BIOGRAPHICAL INFORMATION

	Imaginative	Organizational Change
Age	.01	-.11
Years in Professional Work	.08	-.11
Years in Administration	.11	-.06
Years of Academic Preparation	.06	-.02

TABLE VIII-3. CORRELATIONS OF TWO CONTENT SCORES WITH BASIC MENTAL ABILITIES, PROFESSIONAL AND GENERAL KNOWLEDGE, AND BACKGROUND ACHIEVEMENT

	Imaginative	Organizational Change
Basic Mental Abilities		
Deductive Reasoning	.30	.27
Speed of Closure 1	.32	.14
Number Facility 1	.35	.17
Verbal Knowledge	.46	.31
Inductive Reasoning	.34	.21
Associative Memory 1	.17	.09
Number Facility 2	.35	.19
Flexibility of Closure	.35	.30
Associative Memory 2	.25	.18
General Reasoning	.27	.31
Visualization	.31	.35
Speed of Closure 2	.25	.20
Word Fluency	.40	.19
Expressional Fluency	.26	.18
Ideational Fluency	.38	.19
Associational Fluency	.39	.26
Professional and General Knowledge		
School Administration and Supervision	.65	.42
Education in the Elementary School	.63	.41
NTE Social Studies, Literature, and Arts	.56	.46
NTE Science and Mathematics	.31	.32
Background Achievement Total Score	.46	.45

as high as the reliability of the Imaginative score. If reliabilities of .70 and .90 are assumed for the two measures, and a correction for attenuation is made, the correlation between perfectly reliable measures is found to be .82.

The Social Studies Test also has a fairly high correlation with imaginativeness (r = .56), but the Science and Mathematics Test does not (r = .31). The test covering the background materials of the study correlates .46 with imaginativeness.

Organizational change has a somewhat different pattern of correlations with the basic mental abilities. The highest correlations are those with visualization, verbal knowledge, general reasoning, and flexibility of closure. The correlations are generally lower, as would be expected in view of the lower reliability of the Organizational Change score. The most strongly related tests are of Professional and General Knowledge and the achievement test. The general knowledge and achievement tests are relatively more related to organizational change than imaginativeness.

These correlations can no doubt be attributed partly to a general tendency for bright people to be more productive--to write more, attempt more items, and take more courses of action. Taking more courses of action would of course tend to be associated with higher scores on both content categories.

Correlations with Interest Measures

The correlations of content scores with Strong Vocational Interest Blank scores appear in Table VIII-4. Organizational change correlates significantly with none of the interest measures. But there are some interesting relationships with the Imaginative score, as shown in the first column of the table.

The highest correlation in the Imaginative column is .32 for the psychologist key of the Strong Vocational Interest Blank. There is clearly a tendency for those principals who most resemble psychologists in their responses to this blank to take more of the courses of action which we have designated as imaginative.

Those principals earning high imaginative scores also tend to resemble lawyers (r = .24) and those in jobs at a high occupational level (r = .21). Their interests tend to be unlike those of policemen (r = -.29) accountants (r = -.24) and production managers (r = -.22).

Correlations with Personality Inventory Scores

Correlations of content scores with scores on the basic personality factors are shown in Table VIII-5. Again there are no significant correlations with Organizational Change, and only two significant correlations with the Imaginative score. Principals who take imaginative courses of action are those who tend to be somewhat non-conventional (character strength vs. lack of conventional standards, r = -.23). There is also a slight tendency for imaginativeness to be associated with emotional sensitivity rather than tough-mindedness (r = .21).

Correlations with In-Basket Category Scores

The correlations of content scores with a selected set of 32 in-basket category scores are shown in Table VIII-6. Since both style and content scores were obtained from the same materials, there is some experimental dependence among these measures; one may therefore expect to find spuriously high correlations between the content scores and some of the category scores. This is true, even though the scores on in-basket categories were based on examination of the actual responses

TABLE VIII-4. CORRELATIONS OF TWO CONTENT SCORES WITH STRONG VOCATIONAL INTEREST BLANK SCORES

	Imaginative	Organizational Change
Psychologist	.32	.12
Physician	.12	.02
Engineer	-.05	.03
Production Manager	-.22	.00
Mathematics-Science Teacher	-.18	-.03
Policeman	-.29	-.04
Personnel Manager	.09	.12
Public Administrator	.10	.14
Social Science Teacher	-.02	.01
City School Superintendent	.15	.06
Minister	.11	.03
Accountant	-.24	-.13
Purchasing Agent	-.18	-.09
Sales Manager	.04	.01
Lawyer	.24	.11
President Manufacturing Concern	-.02	-.04
Masculinity-Feminity	-.14	-.01
Occupational Level	.21	.08

produced by the principals, while the content scores were based on the classification of the responses according to course of action taken.

Both the Imaginative and Organizational Change scores have a fairly high correlation with amount written (.56 and .47 respectively). The other high correlations in the Imaginative column are with Asks Subordinates (r = .61), Decides on Procedure (r = .54), Communicates Face-to-face (r = .52), Relates to Other Materials (r = .49), and Discusses with Subordinates (r = .47). The imaginative principals, according to this content score, seem to be characterized by preparation for decision through consultation and collection of information, rather than by acting precipitately. The correlations with Concluding Decision and Terminal Action are negative (r = -.06 and -.30).

The high correlations with categories like Asks Subordinates follows from the kinds of courses of action which were selected as imaginative: about 40 of the 170 courses of action keyed for this content score appear to involve the exchange of information. The correlation can be viewed as merely the result of this emphasis in keying; but the fact remains that the keying of the courses of action was a separate operation, and the correlation is the reflection of the judgments made in the process of keying.

In contrast with the findings for imaginativeness, the correlations involving organizational change are lower and the pattern is different. Positive instead of negative correlations are found with Terminal Action and Concluding Decision (r = .08 and .30). The correlations in the Organizational Change column are higher for several other variables: Follows Subordinates (r = .38), Follows

TABLE VIII-5. CORRELATIONS OF TWO CONTENT SCORES WITH BASIC PERSONALITY FACTORS

	Imaginative	Organizational Change
A. Friendly	-.02	-.06
C. Emotional Stability	.16	.08
E. Dominance	.01	.05
F. Enthusiastic	.06	.06
G. Character Strength	-.23	-.15
H. Adventurous	.02	-.01
I. Emotionally Sensitive	.21	.10
L. Suspicious	-.16	-.05
M. Non-Conventional	.14	.04
N. Sophistication	-.13	-.05
O. Insecurity	-.10	-.05
Q_1. Radicalism	-.01	-.06
Q_2. Self-Sufficiency	.09	.09
Q_3. Will Control	-.11	-.14
Q_4. Nervous Tension	.00	.00

TABLE VIII-6. CORRELATIONS OF TWO CONTENT SCORES WITH IN-BASKET CATEGORY SCORES

	Imaginative	Organizational Change
Asks Subordinates	.61	.34
Informs Subordinates	.45	.29
Discusses with Subordinates	.47	.22
Communicates Face-to-Face	.52	.30
Decides on Procedure	.54	.27
Concluding Decision	-.06	.30
Follows Subordinates	.18	.38
Terminal Action	-.30	.08
Program Values	.26	.23
Conceptual Analysis	.46	.31
Superiors Involved	.21	.23
Discusses with Superiors	.45	.24
Outsiders Involved	.47	.42
Relates to Other Materials	.49	.24
Immediate Work Scheduled	.29	.13
Intermediate Work Scheduled	.29	.10
Informs Outsiders	.29	.34
Follows Outsiders	.20	.29
Courtesy to Outsiders	.19	.21
Leading Action	.39	.18
Courtesy to Subordinates	.20	.05
Directs	.45	.30
Careless	-.19	-.07
Delays	-.07	-.11
Informality to Subordinates	.22	.23
Number of Words	.56	.47
Recognition for Good Work	.42	.28
Prejudges	-.10	-.01
Human Values	.34	.19
Controlled Delegation -	-.07	-.08
Uncontrolled Delegation	-.07	-.11
Sets Deadline	.17	.09

Outsiders (r = .29), Courtesy to Outsiders (r = .21), Informs Outsiders (r = .34) and Superiors Involved (r = .23). These findings suggest that principals who score high on Organizational Change tend to make final decisions and to be sensitive to the needs and wishes of others. In common with the imaginative principals, they also tend to ask subordinates for advice and to involve many outsiders.

Correlations with Group Interaction Categories

Table VIII-7 presents correlations of content scores with the measures based on the group interaction problem. The first five variables are based on records made by observers of the group members and the second five on ratings made by the participants at the conclusion of the problem.

There are several significant correlations involving the Imaginative score. Imaginative principals tend to suggest procedures (r = .24) and ask for information (r = .22) and they tend to be judged as effective in presenting facts (r = .24). They also are inclined to talk a lot (r = .21). One might expect imaginative principals to "raise new issues"; but the correlation is found to be zero.

None of the correlations with Organizational Change reaches .20, although several correlations are statistically significant.

Correlations with Educational Concerns

The Imaginative score correlates significantly with most of the 12 categories of instructional awareness and the six categories of job performance values that were obtained from the teacher evaluation problems presented on kinescopes and from the educational problems presented on tapes (Table VIII-8). Some of the correlations are

TABLE VIII-7. CORRELATIONS OF TWO CONTENT SCORES WITH GROUP INTERACTION CATEGORIES

	Imaginative	Organizational Change
Frequency of Interaction	.15	.13
Gives Positive Information	.18	.08
Asks for Information	.22	.15
Suggests New Procedures	.24	.17
Raises New Issues	.00	.17
Presents Facts Effectively	.24	.18
Makes Decisions Effectively	.16	.13
Amount of Talking	.21	.11
Attempts to Influence	.17	.07
Friendliness	-.03	-.02

fairly high; for example, Imaginative correlated .41 with the instructional awareness category score, Objectives. Although there are exceptions, the high correlations tend to involve concerns with those educational matters which imply a high level of professional insight and which involve abstract concepts (e.g., Objectives, r = .41; Curriculum, r = .37; Methods, r = .34; Planning, r = .33; and Evaluation, r = .32), in contrast with more concrete and perhaps superficial concerns, (Climate, r = .16; Classroom, r = .08; and Materials r = .29). The correlations with concerns expressed to the tape problems permit a similar interpretation.

The correlations involving Organizational Change show a somewhat similar pattern but tend to be lower. Organizational Change has relatively much lower correlations with Objectives (r = .09) and Evaluation (r = .07), and a higher correlation (relatively) with Interest (r = .20).

Correlations with Subjective Evaluations

In Table VIII-9 are shown the correlations of the two content scores with the various subjective evaluations that were made of the work of the 232 principals. These evaluations include (1) an over-all evaluation of the principal's work in his own school, made by two or more of his superiors, (2) an average of the over-all evaluations made by each of the scorers upon completion of the scoring of her part of the in-basket test, (3) an evaluation made by two or more members of the research staff at the end of the test week, (4) the mean score on the Teacher Reaction Form, the questionnaire that was filled out by all the teachers serving under each principal in his home school, and (5 and 6) the Consideration and Initiating Structure scores from the Principals' Behavior Description Questionnaire which was also filled out by each teacher to describe his principal's behavior. A full

TABLE VIII-8. CORRELATIONS OF TWO CONTENT SCORES WITH CATEGORIES OF INSTRUCTIONAL AWARENESS AND JOB PERFORMANCE VALUES

	Imaginative	Organizational Change
Instructional Awareness		
Objectives	.41	.09
Evaluation	.32	.07
Planning	.33	.09
Curriculum	.37	.20
Participation	.29	.18
Interest	.26	.20
Growth	.30	.12
Methods	.34	.19
Materials	.29	.13
Personality	.35	.29
Classroom	.08	.08
Climate	.16	.09
Job Performance Values		
Instruction	.31	.16
Pupils	.21	.19
Employees	.23	.16
Physical	.05	.04
Structure	.31	.21
Public	.09	.14

description of each of these scores will be found in Chapter XI.

The scorers' rating has a high correlation with both content scores, especially the Imaginative score (r = .58 as compared with .42). Since the scorers' ratings are based on their examination of the same materials that produced the content scores, there is a certain amount of spurious dependence which increases the correlations. Nevertheless, the correlations can be interpreted indicating that scorers tend to give high ratings to principals who took many imaginative actions and produced many organizational changes, especially the former.

Staff members also tended to give high ratings to principals who are high on Imaginative and Organizational Change scores (r = .32 and .26). Superiors tend very slightly to prefer principals with high scores on Imaginative (r = .20), but their preferences are unrelated to Organizational Change (r = .09).

Scores on the Teacher Reaction Form correlate with both content scores at a marginally significant level (r = .17 and .16), and the Consideration and Initiating Structure scores are unrelated to imaginativeness (r = .07 and .06); but the correlations with the Organizational Change score present an interesting problem in interpretation. At least on the basis of the names of the variables, one would expect a high correlation between Initiating Structure and Organizational Change and a zero or perhaps negative correlation between Consideration and Organizational Change. Instead we find a significant positive correlation of Consideration with Organizational Change (r = .20) and a negative (although non-significant) correlation with Initiating Structure (r = -.11).

An explanation of this paradox can perhaps be found by examining more closely the two measures in question--Initiating Structure and

TABLE VIII-9. CORRELATIONS OF TWO CONTENT SCORES WITH OVER-ALL SUBJECTIVE EVALUATIONS

	Imaginative	Organizational Change
Superiors' Rating	.20	.09
In-Basket Scorers' Rating	.58	.42
Staff Members' Rating	.32	.26
Teachers' Reaction	.17	.16
Consideration	.07	.20
Initiating Structure	.06	-.11

Organizational Change--and their correlations with other measures. Initiating Structure is a score based on teachers' responses to 15 questionnaire items, such as:

He makes his attitudes clear to the faculty.

He rules with an iron hand.

He criticizes poor work.

He lets faculty members know what is expected of him.

The Organizational Change score is a count of the number of courses of action taken in response to in-basket items which have been keyed for this variable. They include such courses of action as "clarify responsibility of custodian," "remind Ruth Platz to obtain phone numbers on memo," "appoint faculty committee to study the problem," "formulate a set of regulations, " "have policy established," and "change lunch schedule." Examination of both variables at this level suggests that there is considerable similarity between the two measures. But there are three additional considerations to keep in mind about the Organizational Change score: (1) The course of action need not actually be taken in order to be scored; the subject may have merely planned to take the action or he may have only considered it. (2) The course of action taken may be one which was proposed to the subject by someone else. (3) Content scores are influenced by the total productivity of the subject -- his responding to many items and taking many courses of action. Therefore, there may be much less initiative involved in producing organizational changes than is implied by the name of the score.

When we examine the correlations of Initiating Structure and Organizational Change with other variables, we find some interesting contrasts. Here are the correlations with some ability measures:

	Initiating Structure	Organizational Change
Social studies	-.20	.46
Science and mathematics	-.20	.32
Deductive reasoning	-.10	.27
General reasoning	-.19	.31

Those high on Organizational Change tend to be brighter and better educated than those who are low, while the opposite is true for Initiating Structure.

Here are correlations with some other measures:

	Initiating Structure	Organizational Change
Strong Vocational Interest Blank: President Manufacturing Concern	.26	-.04
Basic Personality Factor: Character Strength	.25	-.15
In-Basket Composite C: Complying with Suggestions*	-.12	.21
In-Basket Composite E: Maintaining Relationships*	-.01	.35
In-Basket Composite G: Responding to Outsiders*	-.07	.37
In-Basket Composite H: Directing Work*	.02	.29

It seems that the Organizational Change score is not a measure of strong aggressive leadership; on the contrary, it is associated with tendencies to act in compliance with suggestions and to please superiors and outsiders. Initiating Structure is unrelated to these characteristics in in-basket behavior and is associated with interests like those of presidents of manufacturing concerns and school supervisors. Those high on Initiating Structure tend to be high on Character Strength; that is, they are conscientious and tend to behave in accordance with standards imposed by society.

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* These scores are defined in Chapter XII.

Organizational Change seems to represent behavior which involves controlling others, not through strong personal leadership but as a way of complying with the wishes of others. While the high correlations with tests of reasoning and academic achievement is in part artifactual, there may be a tendency for those high in Organizational Change to be superior in intellectual attainments.

Table VIII-10 presents the correlations of content scores with the superiors' ratings of 12 aspects of the principals' work. The over-all superiors' rating correlated .20 and .09 with the two content scores (Table VIII-9). We see that only one of the more detailed ratings correlates significantly with Organizational Change. Imaginative is associated slightly with interest in work (r = .23), knowledge of the job (r = .23 and .29), understanding (r = .23), and oral communication skills (r = .23 and .25); but it is unrelated to superiors' judgments of ability to work with other adults or with children.

Table VIII-11 shows the correlations of the items in the scorers' Adjective Check List with the two content scores. The correlations of the scorers' over-all impression with Imaginative and Organizational Change scores were .58 and .42 (Table VIII-9). The correlations in Table VIII-11 are all lower for the adjectives than for the over-all rating. When we compare the correlations between adjectives and scorers' ratings with the correlations between adjectives and content scores, we find about the same rank order of correlations, except that

TABLE VIII-10. CORRELATIONS OF TWO CONTENT SCORES WITH SUPERIORS' RATINGS

	Imaginative	Organizational Change
Interest in Work	.23	.11
Sticking to a Job	.17	.10
Getting Along with Teachers	.08	.09
Getting Along with Parents	-.01	.03
Getting Along with Supervisors	.06	.03
Knowledge of Administration	.23	.09
Knowledge of Teaching	.29	.07
Rapport with Children	.03	-.02
Written Communication	.17	.09
Understanding	.23	.14
Oral Communication (Formal)	.23	.10
Oral Communication (Informal)	.25	.20

TABLE VIII-11. CORRELATIONS OF TWO CONTENT SCORES WITH ITEMS OF THE SCORERS' ADJECTIVE CHECK LIST

	Imaginative	Organizational Change
Urbane	.56	.38
Forceful	.40	.31
Slipshod	-.44	-.25
Cold	-.08	-.04
Resourceful	.53	.28
Logical	.48	.26
Tactful	.33	.13
Wordy	.42	.14
Courteous	.15	.07
Witty	.33	.20

imaginativeness apparently implies a little more "wordiness" and a little less "forcefulness" than does the scorers' over-all rating.

Summary

Those who earn high scores on the Imaginative content score are likely to be bright, well-educated people. They get high scores on tests of professional knowledge and general culture and are high especially on the cognitive ability tests of verbal knowledge and fluency. In the in-basket situation they are characterized by much exchanging of information and discussion but not by compliance. In-basket scorers rate them high; the staff tends to give them high ratings, but the superiors' over-all rating has only a small relation to imaginativeness. In the interaction situation, high scorers tend to suggest procedures and ask for information and to be rated high on effectiveness in presenting facts. They express concerns about a wide variety of educational problems in the film and tape problems. High imaginativeness tends slightly to go with lack of conventional standards and emotional sensitivity. With respect to interests, the most imaginative principals tend to resemble psychologists and, to a lesser extent, lawyers, and to be different from policemen, accountants, and production managers.

The Imaginative score may be thought of as an evaluation of the quality of the intellectual performance of the principals in the in-basket situations as viewed solely from the standpoint of the content of their actions; the score represents the number of "good ideas" produced. This performance is highly predictable, especially from tests of professional knowledge such as the School Administration and Supervision .

Organizational Change, as measured by the content score, does not measure strong aggressive leadership so much as a tendency to make changes in the organization as are required to please outsiders and superiors or in compliance with suggestions. This content score has fairly high correlations with tests of professional knowledge and general achievement and is relatively more closely related to visualization, verbal knowledge, and reasoning than to fluency. Those with high scores on Organizational Change tend to be rated high by the scorers and by the staff. Teachers tend to view them as considerate rather than as high on initiating structure. High scorers tend slightly to express concerns about teacher personality in evaluating teachers, but generally Organizational Change has little relation to number of concerns expressed about educational problems.

CHAPTER IX

CONCERNS AND VALUES OF ELEMENTARY SCHOOL PRINCIPALS

In earlier chapters, attention has been focused upon scores which describe the behavior exhibited by principals in handling their in-basket problems. Some of the categories used to score in-basket responses describe performance from the standpoint of content and some from a stylistic point of view. A few of the stylistic categories, such as Uses Human Values, presumably reflect underlying attitudes and values of the principals. This chapter will describe further attempts to measure the concerns and values which may be inferred from the responses of principals in problem situations other than those represented in the in-basket tests.

One of the important responsibilities of the elementary school principal is the supervision of instruction. During the test week, the principals of Whitman School were required to make critical observations of teachers teaching as presented in the kinescopes. On another occasion, they were asked to participate in tape recorded conferences on educational problems. During the first day of the test week, when the principals were learning about Jefferson and Whitman School, examination booklets were distributed which required each principal to list some salient problems and characteristics of the school and community. All three of these problem situations were relatively unstructured. As in a projective test, variations in response could thus be expected to reflect the attitudes, values, and concerns of the respondents.

The Kinescopes

The Task

The principals were informed that in this phase of their work, they were to visit the classrooms of the three probationary teachers in Whitman School. These visits were made by viewing three 15-minute kinescopes of the teachers working with their classes. The projector was stopped at the end of each visit and each principal was asked to complete a probationary report form and to outline the interview which he planned to have with the teacher visited. School system regulations required that this report form be completed and the interview conducted before submitting the report form to the superintendent.

The probationary report form was typical of those used for this purpose. It provided for free responses to items dealing with personal appearance, pupil response, attitude, achievement, classroom control, classroom techniques, professional alertness, and suggestions for improvement. The response sheet which was provided for the interview outline simply stated, "Outline how you would conduct your interview with ______, indicating each point you intend to cover." After viewing each kinescope, the principals were allowed 15 minutes to complete these two forms.

Description of the Kinescopes

Kinescope I - Mildred Kramer--Mildred Kramer was a first-year teacher of the fifth grade in Whitman School. Marion Smith had encountered a number of problem items in previous in-basket test situations in which Miss Kramer was involved. As he entered the classroom, a social studies lesson was in progress. Miss Kramer was standing at the front of the room clutching her open geography book. This textbook remained open throughout the entire lesson and Miss Kramer referred to it quite often during the course of a question-and-answer period. The observed lesson dealt with the geography of the Middle Atlantic states. The children of the class were seen in various activities, some were obviously engaged in other than learning geography. As the lesson progressed, the class remained orderly and to some extent responsive. However, disinterest in the lesson was evident. Some children were reading other material hidden inside their geography text, while others were simply idling away time by drawing on the board or notebook. Some lack of organization was noted in the way books were distributed and collected.

The maps and charts on the board were rather poorly done and contained errors and misspellings. During the course of the 15-minute visit, Principal Smith observed Miss Kramer drawing from her textbook numerous questions on the geography of the eastern seaboard and directing these questions to a small number of selected students in the class. During the short session, Miss Kramer found occasion to make a critical remark about the principal, squelch a pupil who doubted the accuracy of the material in the textbook, and punish a child by assigning additional homework because he had lost the place in the textbook.

Kinescope II - Evelyn Waters--The second kinescope visit was made to the classroom of Evelyn Waters. Mrs. Waters, a third-grade teacher at Whitman, although somewhat older than Miss Kramer, was also a first-year teacher in the Jefferson system. This class was working on social studies and was busy with a unit centered around "community helpers." There were numerous charts and posters depicting people engaged in various community services. In general, the room was rather neatly arranged and the posters were of high quality. Mrs. Waters discussed some of the previous day's activities with the class. Following this discussion, they decided which of the community helpers they would most like to study. Mrs. Waters divided the class into small groups for the purpose of deciding the important things which they would like to find out about community helpers. The groups worked quietly for a short period of time before coming back together as a class. A spokesman for each group reported on the major interests of the group members. The teacher recorded these areas of interest on a chart as the children related them to her, rewording the ideas of the children before writing them down. At the same time, she was able to encourage the slower pupils as they attempted to make contributions to the class discussion. A majority of the class contributed to the discussion. Near the end of the visit, various committees made up of class members were formed. Each committee was given a definite assignment which involved finding out something about the work of a specific community helper.

Kinescope III - Eugenia Walenski--The third visit was made to the first-grade classroom of Miss Eugenia Walenski. Unlike the other two teachers, Miss Walenski was in her second year at Whitman, although still on probationary appointment. (The in-basket material with which the principals had worked for the previous day and a half had provided this information, but they were not reminded of these facts. The information about Miss Walenski indicated the existence of some problems in her teaching.)

As the principal entered the room, the children were involved in many different activities at various points around the classroom. Some were reading, others were working with science equipment. Still others were counting together and working with large numbers. The children were not unruly, but there seemed to be little coordination of the various activities which were going on in the classroom. Miss Walenski was seated at her desk, where she remained throughout the visit. She was talking with one of the children about a book which the child had been reading. The discussion consisted primarily of a series of simple queries punctuated by highly dramatic "ohs" and "ahs" on the part of Miss Walenski. She called the class together by ringing a bell and proceeded with a "guess-what-is-going-to-happen-next!" type arithmetic lesson. Miss Walenski emphasized the importance of good work to her first-grade children by awarding gold stars to those who completed the mimeographed arithmetic seatwork. Some confusion was evident when the teacher failed to give clear directions for the assignment.

Scoring the Principal's Responses

Since the probationary report form and the interview outline made possible free responses on the part of each of the subjects, wide latitude in writing reactions to the three classroom visitations was possible. Some structure was provided in the probationary report form in that key words tended to suggest certain specific responses.

At least two avenues seemed possible for analyzing the responses of the Whitman principals. One of these was to examine what the principals did or planned to do about the performance of each of the three teachers. The second possibility was to use the principals' responses as indicators of awareness of instructional problems as they planned the supervisory conference and evaluated each teacher. Since it was felt that responses to these materials were most appropriate for determining the principals' expressed awareness of instructional issues, the latter procedure was chosen. Information of this type made possible the study of the principals' performance of the supervisory job in terms of the concerns they deemed most important in the instructional situation.

As a preliminary step, a content analysis was made of the responses of 21 randomly selected principals. Their 21 response records were thoroughly examined, and each phrase or idea that exemplified an awareness of some aspect of instruction was abstracted. These phrases and ideas were then examined by several students and professors of elementary education, and a classification of "categories of instructional awareness" was developed to include all of the ideas expressed in this sample of responses. This procedure resulted in 12 categories which were later revised several times and carefully defined.

The 12 categories are listed below, with definitions and examples for each category:

1. Objectives--References to aims, purposes, goals, or objectives of the teaching situation.

   Example: "What did you aim to teach?"

2. Evaluation--Concern for pupil achievement, summary of learning, evaluation of the lesson, or a test situation.

Example: "What do you think the children learned during this period?"

3. Planning and Continuity (Planning)--Concern with the planning of the lesson, utilization of time, pupil-teacher planning, establishing study questions, planning for future, reference to a previous lesson.

   Examples: "Planning of work should be done by blocks of interest."

   "What are your plans for the future?"

   "What is the next step?"

4. Curriculum--Concern for the content of the subject being taught and the scope and sequence of the lesson.

   Examples: "Don't you think you tried to cover too much?"

   "Seasonal materials--good."

5. Pupil Participation (Participation)--Concern for the children taking part in class activities, through discussion, establishing study procedures, group work, panels or reports, and the like.

   Example: "Secure more participation--be aware of the whole class."

6. Motivation--Pupil Interest (Interest)-- Concern for the problem of stimulating the learning situation, the interest of the pupils, cooperation of the pupils, and the teacher's motivational technique.

   Examples: "Teacher used good motivation materials."

   "The children remained interested throughout the lesson."

7. Child Growth and Development (Growth)--Concern for individual differences of boys and girls, provisions made for rapid learners or slow learners, understanding of emotional and intellectual needs of children.

   Examples: "Kindness shown to forgetful child."
   "Outcomes related to pupil growth."
   "Draw out the slow ones."
   "No provision for individual differences."
   "Why are all the pupils at the same level?"

8. Methods of Instruction (Methods)--Comments regarding particular techniques used by the teacher in handling her class or in presenting content material.

   Examples: "Find the word 'five', now find the number '5'."
   "Lesson was skillfully guided, but not dominated."
   "Need to improve in using this particular technique."
   "Excellent opportunity for use of the group procedure in learning."

9. Materials of Instruction (Materials)--Comments regarding the availability of instructional materials, books, maps, and the like, suitability of materials for the group being taught and care of instructional materials.

   Examples: "Let the children handle materials."
   "Use large map."
   "Comment on the bulletin board."

10. Personality of Teachers (Personality)--Concern for personal characteristics relating to voice, manner, appearance, attitude, emotional stability, dependability, and

alertness of the individual teacher.

Examples: "Voice too low."

"Speak slower--smile."

11. Physical Setting--Classroom (Classroom)--References to the arrangements of the room, the furniture, centers of interest, and general attractiveness.

Examples: "Attractive room."

"Regroup the furniture."

"Classroom too crowded."

"Bulletin boards very attractive."

12. Classroom Climate--Routine (Climate)--Concern for classroom routine, roll call, housekeeping duties, distribution of material, changing of activities. Also, the emotional and social climate of the class group.

Examples: "Have materials of instruction ready."

"Improve the distribution of materials."

"A free democratic atmosphere prevailed."

"I am sure pupils enjoyed your class."

Each response sheet was rated for each of the 12 categories on a five-point scale, the number 5 indicating that, in the opinion of the scorer, the subject exhibited a high degree of awareness of a particular category, and a score of 1 indicating an absence of any expression of awareness of the category. Care was taken to minimize subjectivity in the scoring procedure. Three doctoral students at Auburn University were employed to carry out the rating task. Each of these men was experienced in supervising instruction in elementary schools. The raters had not previously engaged in any phase of this research undertaking; they had not viewed the kinescopes; and they could not identify, individually or geographically, any of the subjects being scored.

A training session was conducted at which time the categories of instructional awareness were defined and discussed by a member of the research staff and the three scorers. A preliminary run was made in which each of the scorers and the staff member scored together and discussed several of the respondents' papers. After this training period, the three scorers independently rated each principal, carefully following the definition of each category. Each principal was rated on the five-point scale for each of the 12 categories separately for his responses to Kramer, Waters, and Walenski. This scoring procedure resulted in three independent scores on each category for each of the three teachers.

To obtain total scores, the ratings of the three judges were combined by computing a mean rating for each of the three teachers. The mean ratings on each of the three teachers were then summed; this yielded a score for each category ranging from 3-15 for each principal. A score of 3 indicates a complete absence of instructional awareness on a given category, while a score of 15 represents a definite awareness of the instructional concern.

Reliability of the Rating Procedure

An intra-class correlation coefficient was computed for each of the 12 categories, the three kinescopes constituting the classes in the computations. The obtained coefficients were corrected by the Spearman-Brown formula to correct for the use of three kinescopes. Table IX-1 presents the estimated reliability of each of the scoring

TABLE IX-1. MEANS, STANDARD DEVIATIONS, AND RELIABILITY ESTIMATES FOR 12 CATEGORIES OF INSTRUCTIONAL AWARENESS

Category of Instructional Awareness	Mean	Standard Deviation	Estimated Reliability
Objectives	5.74	3.01	.77
Evaluation	6.86	2.55	.71
Planning	8.93	3.19	.67
Curriculum	7.44	2.46	.66
Participation	12.98	1.65	.50
Interest	13.78	1.17	.56
Growth	6.57	2.19	.68
Methods	13.01	1.41	.64
Materials	8.87	3.43	.63
Personality	14.05	.90	.67
Classroom	6.37	2.84	.50
Climate	11.23	1.48	.58

categories together with the mean and standard deviations of these scores.

These reliability estimates reflect both the amount of consistency of the principals' performance across the three teachers they evaluated and the amount of agreement among the raters For example, those principals who were judged to be aware of Objectives in rating Kramer tended also to be judged aware of Objectives in evaluating Waters and Walenski. These concerns, as reflected by the 12 scoring categories, tend to be consistent instructional awarenesses of the principals.

Analysis of Responses to the Kinescopes

Although scores were assigned separately for each of the 12 scoring categories, these categories may not represent basically independent areas of instructional awareness. In order to achieve a better understanding of the basic awarenesses or concerns that were scored by use of the 12 categories, factor analysis was used to examine their interrelationships. Table IX-2 presents the intercorrelations among the 12 category scores for the 232 principals. The factor analysis involved the correlations reported in Table IX-2. Communalities were estimated as equal to the highest correlation in the row or column and the characteristic roots and vectors of the resulting matrix were then computed. The 12 roots were inspected, resulting in a decision to obtain loadings for four factors. Table IX-3 shows the unrotated and the rotated factor matrices. Residual correlations, shown above the diagonal of Table IX-2, are uniformly quite small.

TABLE IX-2. INTERCORRELATIONS AMONG 12 INSTRUCTIONAL AWARENESS SCORING CATEGORIES[a]

Category	1	2	3	4	5	6	7	8	9	10	11	12
Objectives		.02	.02	.02	-.01	.00	-.01	.00	-.02	.00	.02	-.00
Evaluation	.63		-.08	-.01	.03	-.00	-.06	.00	.04	.01	.02	-.02
Planning	.60	.44		-.03	-.04	.02	.05	-.01	-.03	.01	-.00	.02
Curriculum	.57	.47	.48		.02	-.01	.01	.01	.03	-.01	-.03	.00
Participation	.31	.31	.30	.33		.02	-.02	-.01	.03	-.00	-.02	.00
Interest	.29	.26	.33	.34	.68		-.01	.02	-.01	.00	.03	-.02
Growth	.39	.29	.42	.42	.30	.35		-.03	-.03	.00	-.03	.04
Methods	.34	.29	.29	.42	.31	.45	.33		.04	.02	-.02	-.00
Materials	.36	.33	.35	.54	.27	.30	.33	.42		-.03	.02	-.02
Personality	.23	.25	.20	.21	.39	.48	.27	.41	.08		.02	-.00
Classroom	.09	.02	.12	.24	.18	.30	.17	.23	.42	.08		-.02
Climate	.15	.08	.21	.29	.33	.37	.29	.31	.33	.20	.32	

[a] Residual correlations from the factor analysis are inserted above the diagonal.

TABLE IX-3. FACTOR MATRICES FOR 12 INSTRUCTIONAL AWARENESS CATEGORIES

Category	Unrotated Orthogonal Factor Matrix				Rotated Oblique Factor Matrix				h^2
	I	II	III	IV	A	B	C	D	
Objectives	.68	-.44	-.10	-.03	.69	-.01	.04	.00	.66
Evaluation	.60	-.42	-.20	-.01	.63	.01	-.07	.04	.57
Planning	.64	-.31	-.04	-.13	.58	.09	.10	-.09	.52
Curriculum	.71	-.21	.18	.03	.49	-.05	.35	.01	.58
Participation	.63	.34	-.28	-.30	.06	.62	-.06	-.09	.68
Interest	.68	.44	-.20	-.09	-.06	.48	.06	.11	.70
Growth	.57	-.04	.03	.06	.27	.03	.20	.10	.33
Methods	.60	.13	.03	.32	.07	-.08	.25	.37	.48
Materials	.60	-.03	.45	.01	.29	-.08	.60	-.06	.57
Personality	.47	.26	-.36	.29	-.08	.14	-.15	.46	.50
Classroom	.35	.28	.44	-.05	-.08	.06	.55	-.08	.40
Climate	.45	.30	.21	-.03	-.06	.16	.36	.01	.33

Rotations from the orthogonal factor matrix to the oblique factor matrix were guided by the criteria of simple structure and were done by inspection of successive plots of the loadings of the category scores on pairs of factors. The final transformation matrix and the intercorrelations among the oblique factors are given in Table IX-4.

The four factors show a considerable degree of positive intercorrelation, ranging from .27 for Factor A with Factor C to .69 for B with D. These correlations indicate that although distinctions can be made between the four factors of instructional awareness, all have a substantial common core.

Factor A, as shown in Table IX-3, is characterized by high loadings on Objectives, Evaluation, Planning, and Curriculum. For each of these categories, the factor loading is .49 or above. It may also be noted that a loading of .27 appears for Growth and a loading of .29 for Materials. The large amount of variance that is accounted for by the first four categories, however, indicates that this factor is primarily related to aspects of the educational program and, therefore, it has been captioned Concern for Educational Program.

Factor B is characterized by loadings of .62 and .48 on Participation and Interest, respectively. Concern for Pupil Reactions has been used as the descriptive title for this factor.

In the case of Factor C there are loadings of .60 for Materials, .55 for Classroom, .36 for Climate, and .35 for Curriculum. This factor has been labeled Concern for the Physical Aspects of Instruction.

Factor D is characterized by loadings on Personality of .46 and

TABLE IX-4. TRANSFORMATION MATRIX AND CORRELATIONS AMONG FOUR FACTORS FROM THE ANALYSIS OF CATEGORIES OF INSTRUCTIONAL AWARENESS

Transformation Matrix					Intercorrelations				
Factor	A	B	C	D	Factor	A	B	C	D
I	.44	.19	.29	.10	A	1.00	.44	.27	.51
II	-.87	.46	.13	.17	B	.44	1.00	.52	.69
III	.00	-.40	.95	-.27	C	.27	.52	1.00	.44
IV	-.24	-.77	.08	.94	D	.51	.69	.44	1.00

on Methods of .37. This factor has been labeled Concern with Teacher Behavior.

Frequency of Responses

Frequency distributions of the scores for each of the 12 categories of instructional awareness are reported in Table IX-5. The categories have been arranged in accordance with the results of the factor analysis. A rather interesting pattern is revealed in the examination of this frequency distribution.

The first four categories, which account for most of the loading on Factor A, produced high frequencies at the lower end of the scale. Thus, a very large percentage of the principals expressed little or no concern for the educational program. A contrasting frequency pattern was obtained for the two categories which loaded Factor B and the two with high loadings on Factor D. A high percentage of the principals indicated considerable awareness for pupil reactions and teacher behavior. The categories loading Factor C, Physical Aspect of Instruction, elicited high frequencies at the lower end of the scale (except for Climate).

It is possible that the cues which were present on the probationary report form influenced the frequency of response on the various categories. This form provided key words which might have suggested responses in the areas covered by factors Pupil Participation and Teacher Behavior. The interview outline, although free of such cues, was completed after the subjects had completed the probationary report form, which may have increased the probability of a carry-over of cues from the probationary report form to the task of preparing the outline. On the other hand, several cues

TABLE IX-5. FREQUENCY DISTRIBUTION OF CATEGORY SCORES OF INSTRUCTIONAL AWARENESS ARRANGED BY MAJOR FACTORS

	Factors and Categories											Not As-signed
	Factor A				Factor B		Factor C			Factor D		
	Educational Program				Pupil Reaction		Physical Aspects of Instruction			Teacher Behavior		
Score	Objectives	Evaluation	Planning	Curriculum	Participation	Interest	Materials	Classroom	Climate	Personality	Methods	Growth
15	3	1	5	0	53	93	12	3	2	126	44	0
14	1	0	12	1	58	66	13	3	14	63	57	0
13	6	5	10	4	51	45	18	1	36	22	55	2
12	9	8	36	5	28	17	18	7	52	16	36	2
11	5	10	20	15	19	7	23	8	47	4	21	6
10	9	18	20	28	15	1	20	13	47	1	15	14
9	8	27	25	29	4	3	29	14	28	0	4	21
8	20	21	18	31	3	0	14	18	5	0	0	31
7	13	25	25	32	0	0	22	36	1	0	0	38
6	12	36	22	25	1	0	11	25	0	0	0	34
5	22	31	7	29	0	0	15	24	0	0	0	35
4	36	26	16	15	0	0	22	26	0	0	0	21
3	88	24	16	18	0	0	15	54	0	0	0	28

which were listed on the probationary form did not elicit written expressions of concern to the level which seemed to merit including them as categories of awareness. It can be assumed that the manner in which content categories were derived served to reduce somewhat the effect of the specific testing materials on the frequency of response within each of the 12 categories. The responses were obviously made to what the principals saw in the kinescopes, and what they saw was not necessarily representative of teacher performance in general. The limited period of observation (15 minutes per teacher) may have tended to preclude the observation of behavior relevant to long-term educational objectives.

For the reasons given in the above paragraphs, no attempt will be made to generalize about the principals' supervisory behavior from the frequency pattern noted in Table IX-5. But a number of intriguing questions are suggested by the findings. Are elementary school principals more concerned with pupil reactions and teacher behavior than with the educational program? Do principals place very high values on teacher personality, method of instruction, pupil interest, and pupil participation, and neglect such matters as the purpose of a learning activity, the scope and sequence of the lesson, planning of the learning activity, and the evaluation of learning outcomes? Do these variations in frequency among the categories reflect the programs under which these principals were trained? If these differences are not merely artifacts of the method and materials used in this investigation, but are a true indication of on-the-job behavior of elementary school principals, the findings have great significance for the training of elementary school principals.

The Tape Recordings

Another phase of Thursday afternoon's work was presented in the form of tape recordings. Five different problem episodes were presented. The principals were instructed to consider the problems raised in each recording as relating to the role of principal of Whitman School. After listening to each of the taped situations, the principals were allowed six minutes to respond to a set of four open-ended questions. A brief description of each of the situations is given below along with the questions for each episode.

The First Episode--This tape recording presents a conference led by the school psychologist. The other people involved in the conference were a sixth grade Whitman teacher, one of the other teachers in Whitman School, and the school nurse. They devoted the conference to a discussion of the problems of a sixth grade pupil, Dick, who was above average academically but had social adjustment problems. He seemed insecure and withdrawn, with definite compulsive tendencies which were expressed in extreme neatness and a marked preference for routine activities. The group aired many facts and opinions about Dick, his school work, his home life, and his parents. The conference was then interrupted, and Marion Smith was asked to answer the following questions: (1) What do you see as the problem? (2) How would you involve Dick's parents in meeting this problem? (3) What would you advise Mr. Kelley, Dick's teacher, to do in helping Dick with his problem? (4) What role would you have Dr. Silverstein, the psychologist, take in working with Dick?

The Second Episode--This audio presentation was of a conference between the second grade teacher, Mrs. Schultz, and the mother of one of the children in her class. The mother was concerned with the progress her child was making in reading, and the teacher succeeded in guiding the discussion in a cordial, if somewhat evasive, manner. Several times during the conference the problem of reading was introduced by the mother, and the teacher carefully changed the course of the conversation to some other subject area. The following four questions were presented to the principal after this tape-recorded episode was interrupted: (1) What would you say to Mrs. Schultz in criticism of the manner in which she conducted the conference? (2) Did this conference accomplish anything toward the school's general objective? If so, what and how? (3) What impressions did you receive regarding Mrs. Schultz as a classroom teacher? (4) How would you evaluate Robert's school progress?

The Third Episode--A short address by Dr. Donnelly, the superintendent, at a P.T.A. meeting was presented by this tape. The superintendent devoted a major part of his address to the plans that were under way for an addition to one of the buildings. The speech provided many cues about the personality of the superintendent. He quite skillfully placed the burden for the educational program of the community on the parents. The following four questions were presented to the principals when the recording ended: (1) If plans for the new addition to the junior high school are disapproved by the community, what implications would that fact have for you at Whitman? (2) Has listening to this talk given you further insight into Dr. Donnelly's personality? If so, what? (3) During his address, Dr. Donnelly reveals something of his general philosophy regarding the place of physical facilities in the education of children. What one of his views did you consider most significant for you as principal of Whitman School? Why? (4) The day after the address, Dr. Donnelly called each of his principals on the phone and said, "I noticed you were at the P.T.A. meeting last night and am anxious to know how you think my talk was received. Would you jot down any ideas you have about anything we could do to insure that the proposed additions receive approval?"

The Fourth Episode--This tape recording presented a part of a special annual meeting attended by the Board of Education, the superintendent, the assistant superintendent, and the principals. The topic of discussion concerned the school's responsibility for maladjusted children in the school system. Considerable give and take occurred among the discussants as the meeting progressed. Several individuals cited specific instances of pupil behavior which might be considered delinquent. At the conclusion of the recording, the principals were asked to respond to the following questions: (1) The President of the Board turns to you at the end of the recording and says, "You are new in our system this year; what are your ideas about the adequacy of our guidance activities in the elementary schools?" Outline your answer below. (2) In your opinion, are the policies in Jefferson schools too lenient toward the maladjusted child? Why? (3) What plans do you have for handling the problems of the troublesome child at Whitman School? (4) How would you report the substance of this discussion you have heard to your teachers? What do you do or say?

The Fifth Episode--The final tape-recorded episode was another part of the special meeting with the Board of Education. The topic under consideration at this time was the teaching of foreign languages in the elementary school. In the course of the discussion, considerable attention was given to the desirability of major curriculum changes and to the costs of a foreign language program. The superintendent appeared to dominate the discussion. When the recording was finished, the principals were again allowed six minutes to answer the following four questions: (1) The discussion of foreign languages in the elementary school continued after the end of the recording. Dr. Donnelly turned to you and asked, "What is your view, Marion, on teaching foreign languages at Whitman?" Write your reply below. (2) Do you think Dr. Donnelly's estimate of the cost ($25,000) of a foreign language program in the elementary schools is realistic? Why? (3) How would you respond to the community pressure to teach foreign languages in the elementary school? (4) What criticism do you have of Dr. Donnelly's plan to begin the teaching of foreign languages at the seventh grade?

Evaluating the Responses

The scoring procedure used in this part of the study was very much like the one used in evaluating the kinescope responses, the major difference being in the degree of specificity of the scoring categories. Whereas the kinescope responses were rated in terms of 12 relatively specific categories of awareness for instruction, the responses to the tape recordings were scored for six categories involving much broader areas. No attempt was made to rate the principals' responses to the separate episodes of the tape recordings. The six categories, like those used to score responses to the kinescope, were derived through content analysis. These categories were called "job performance values." The categories are listed and defined below:

1. Instruction and Curriculum (Instruction)--References to method and materials of instruction as well as references to the total instructional program.

   Examples: "Doesn't consider educational plan."

   "The school had a program of reading."

   "She has a somewhat balanced type of curriculum, actual instruction is not good."

   "She involves the class in a number of interesting activities."

2. Pupil Personnel (Pupils)--References to discipline, child growth and development, achievement, and to social, emotional, and physical well-being of the pupil.

   Examples: "Have him take a complete physical."

   "Dick's problem is not his school achievement."

   "Suspend as last resort."

3. Employed Personnel (Employees)--References to relationships with and responsibility to and for teachers, other staff personnel, and superiors in the school system.

   Examples: "Wasn't behind his entire staff."

   "Did not seem to have professional attitude."

   "I would like to know our chances of obtaining qualified teachers."

   "We had no central administrative head to coordinate all of the personnel work."

4. Physical and Fiscal Organization (Physical)--References to cost of items and related financial factors as well as the

physical environment.

Examples: "Wants adequate and up-to-date facilities."

"Is the space available being used to best advantage?"

"Explain the cost of such a program."

"Classrooms are placed in extremely noisy positions."

"Classroom space inadequate."

"This would bring the cost to $30,000."

5. Planning and Structure (Structure)--References to careful planning and organizational structure.

Examples: "He thought far ahead."

"He probably has some long-range planning in mind."

"Special preparations should be made for this conference."

"I don't see where this can be crowded in."

6. Public Relations (Public)--References to securing and maintaining school-community cooperation and parental support.

Examples: "Make sure that parents are given opportunity to organize publicity program."

"I think some better school-parent relations are needed."

"Parents must be happy if children are to be."

"I would like to have more knowledge of parental feeling."

The same three individuals who rated the principals' responses to the kinescopes were employed to score the responses to the tape recordings. As before, a five-point rating scale was used. The score of 1 indicated an absence of expressed concern for a particular job performance value while 5 expressed high concern. The raters were instructed to consider the responses to all five of the episodes collectively and rate each of the 232 principals on each of the six categories.

Intra-class correlation coefficients were computed for the six categories; but this time, since the five episodes were not scored separately, the raters constituted the classes in the computation. The coefficients for the six categories were corrected by the Spearman-Brown formula as estimates of reliability. The means, standard deviations, and reliability estimates are presented in Table IX-6.

These reliabilities reflect only the amount of agreement of raters; the consistency of behavior of the principals is not reflected one way or the other in these estimates. Therefore, these are not the same type of reliability estimates as were made for the categories of instructional awareness. The reliability coefficients are markedly lower than those obtained for the 12 scoring categories of instructional awareness, in spite of the fact that they reflect only rater disagreement. Three reasons are suggested for the low reliabilities: (1) the less precise definition of the categories used to score the response materials, (2) a smaller volume of responses (the principals' working time on the three kinescopes totaled 45 minutes, but only 30 minutes were allowed for responding to the five tape-recorded episodes), and (3) the less structured nature of

TABLE IX-6. MEANS, STANDARD DEVIATIONS, AND RELIABILITY ESTIMATES FOR SIX CATEGORIES OF JOB PERFORMANCE VALUES

Job Performance Value	Mean	Standard Deviation	Estimated Reliability of Rating
Instruction	11.08	2.01	.49
Pupils	11.58	1.81	.36
Employees	10.86	1.81	.16
Physical	10.33	1.88	.15
Structure	10.27	2.19	.28
Public	11.68	1.76	.21

the responses to the questions following each taped episode. The low reliabilities cannot be accounted for in terms of low variability of ratings. The size of the communalities (h^2) reported in Table IX-8 suggests that these estimates of reliability may be overly conservative.

Analysis of Responses to the Taped Episodes

The same pattern of analysis employed with the categories of instructional awareness was followed in the analysis of the scores for taped episodes. The sums of the three ratings available for each of the six categories were designated as the principle scores for the respective job performance values. These six scores were intercorrelated, and the matrix of interrelationships was factor analyzed. The intercorrelation among the six categories of job performance values are presented in Table IX-7.

Communalities were estimated as equal to the highest correlation in the row or column associated with the category, and the roots and vectors of the resulting matrix were then computed. The six roots were inspected, resulting in a decision to obtain loadings for three factors. Table IX-8 shows the unrotated and the rotated factor matrices. Residual correlations are listed above the diagonal of the table of correlations (Table IX-7) and are very small.

Rotations from the orthogonal factor matrix to the oblique factor matrix were done by inspection of successive plotting of the loadings on pairs of the factors and were guided by criteria of simple structure. The transformation matrix and the intercorrelations among the three oblique factors are given in Table IX-9.

As in the case of the four factors of instructional awareness, the three factors found in this analysis of job performance values

TABLE IX-7. INTERCORRELATIONS AMONG SIX CATEGORIES OF JOB PERFORMANCE VALUES[a]

Job Performance Value	1	2	3	4	5	6
1. Instruction		.01	.03	.00	-.03	-.02
2. Pupils	.58		.00	.00	-.01	.00
3. Employees	.47	.51		-.02	-.02	.02
4. Physical	.34	.36	.22		.02	.02
5. Structure	.41	.43	.38	.19		.00
6. Public	.27	.38	.43	.31	.22	

[a] Residual correlations are listed above the diagonal.

TABLE IX-8. FACTOR MATRICES FOR SIX JOB PERFORMANCE VALUES

Job Performance Value	Unrotated Orthogonal Factor Matrix			Rotated Oblique Factor Matrix			h^2
	I	II	III	A	B	C	
Instruction	.72	-.19	.17	.53	-.07	.21	.58
Pupils	.76	-.05	.06	.45	.11	.17	.59
Employees	.68	.01	-.25	.39	.35	-.09	.53
Physical	.47	.25	.29	.02	.04	.45	.36
Structure	.55	-.26	-.09	.53	.04	-.08	.38
Public	.53	.37	-.16	.00	.47	.10	.45

TABLE IX-9. TRANSFORMATION MATRIX AND CORRELATIONS AMONG THE FACTORS FROM THE ANALYSIS OF SIX CATEGORIES OF JOB PERFORMANCE VALUES

Transformation Matrix				Intercorrelations			
Factor	A	B	C	Factor	A	B	C
I	.54	.24	.19	A	1.000	.49	.50
II	-.83	.61	.40	B	.49	1.000	.54
III	-.11	-.76	.90	C	.50	.54	1.000

have a common core as reflected by correlations ranging between the factors of .49 to .54.

Four of the six categories of job performance values have loadings on Factor A as follows: Instruction, .53; Structure, .53; Pupils, .45; and Employees, .39. This factor is concerned with job performance values relating to the planning and organizing of the internal school program. It has been identified by the title Internal School Program.

Factor B is defined by loadings of .47 for the category Public and .35 for Employees. This factor is clearly defined by job performance values relating to relationship with others including teachers, staff, superiors, and parents. It has been identified as Relationships with Others.

Factor C has a moderate loading (.45) for the category Physical and a small one (.21) for the category Instruction. It has been identified by the title Money and Material.

The job performance values of the principal can thus be described by factors relating to the internal program, personnel relationships, and material matters.

The mean scores on the six categories (Table IX-6) range from 10.27 for Structure to 11.68 for Public. There is no marked difference between the means of the categories that define the three factors.

The Examination Booklets

During the first day of the test week, when materials describing Jefferson and Whitman School were presented, two examination booklets were administered. The primary purpose of these examinations was to direct the attention of the principals to certain aspects of their new situation, to motivate them to learn about the school and community, and to help provide a conceptual organization of the materials. The nature of the questions and the testing conditions suggested that the examination might also be used as a projective test of attitudes and values. Individual differences in what was perceived and in interpretations of the background material might reflect differences in basic interests and values. Each principal might be expected to see in the background material those things which reflect the problems about which he tends to be most concerned.

The first examination was presented immediately after the showing of the film strip which was the first item of the background materials, and the second at the end of the afternoon session, at which time much more information was available to the principals. Each examination consisted of the following three questions:

1. List five (10) outstanding or striking characteristics of the Jefferson schools or community.
2. List five (10) kinds of problems that will be important to you as principal of Whitman.
3. List five (10) topics about which you would be particularly interested in getting more information to aid you in doing your job.

In the morning administration, three minutes were allowed and five responses were requested for each item. In the afternoon administration, six minutes were allowed and 10 responses per item were requested.

Twenty randomly selected answer sheets were examined for the purpose of developing a list of categories of concern expressed by principals in responding to the examination booklets. The list is shown in Table IX-10. Each item in the examination booklets was considered as providing an opportunity to express concern for each of the categories. In scoring each item a 1 or 0 was recorded to indicate whether or not each of the concerns was expressed. One tally was made for each idea mentioned. In scoring, the ideas were classified as specifically as possible. For example, "Government run by Republicans" would have been scored for Community Dynamics rather than the more general category Community.

As the first step in scoring, a set of 50 answer sheets was scored by one person, and a 10 percent sample was rescored by another scorer. When the total scores were compared, high agreement was found; but this high agreement was due to the complete absence of scores for most subjects on most categories. When only categories for which at least one scorer had made at least one tabulation were considered, agreement dropped below 70 percent, which was not considered satisfactory. Further conferences between scorers, followed by a new check on a second sample, brought the agreement up to approximately 80 percent. At this point the principal scorer proceeded to complete the scoring.

The means and standard deviations for the two booklets combined for 12 categories which were chosen for use in the analysis are shown in Table IX-11. Reliabilities are shown in the last column. The 12 scores were chosen before the frequency data were known.

Reliabilities were estimated by correlating scores from booklet 1 with scores from booklet 2 and correcting for double length. The low reliabilities for some of the scores used is no doubt a result of the extremely rare occurrence of some of these concerns.

TABLE IX-10. SCORING CATEGORIES USED IN THE ANALYSIS OF EXAMINATION BOOKLETS

Community

- Physical environment
  - Social environment
  - Institutions
  - Population characteristics

- Community concerns

- Community dynamics

Parents

- As school resource

- As influence on school

- As partners in learning

- Characteristics and attitudes

Pupils

- Needs and characteristics
  - Welfare and safety
  - Discipline

- Educational needs
  - Academic characteristics

Staff

- Professional staff
  - As people
  - Teacher-pupil, teacher-parent relationship
  - Teacher qualifications
  - As educators

- Non-professional staff
  - As functionaries

- Staff-community relations

The School

- Organization dynamics and politics

- Organization structure and procedures

- Institutional ecology
  - Buildings, grounds and facilities
  - Funds and budgets
  - Whitman-system relations

The Educational Program

Personal Behavior

TABLE IX-11. MEANS, STANDARD DEVIATIONS, AND RELIABILITIES OF 12 BACKGROUND ORIENTATION CATEGORIES

Category	Means	Standard Deviation	Reliability
Community			
Institutions	1.35	1.41	.20
Community concerns	1.58	1.42	.18
Community dynamics	0.94	1.19	.29
Parents			
Parents as influence on school	0.59	0.87	.07
Pupils			
Needs and characteristics of pupils	2.19	1.69	.30
Discipline	0.14	0.39	.09
Educational needs of pupils	1.16	1.35	.32
Staff			
Professional staff as people	3.28	1.89	.23
Teacher qualifications	0.84	0.99	.16
Non-professional staff as educators	0.004	0.07	.19
School			
Organization dynamics and politics	2.23	1.79	.20
Funds and budgets	0.75	0.92	.38

Lack of reliability is also in part attributable to scorer inconsistency. Apparently the problem of scorer reliability arises not so much from the training of the scorers as from the ambiguity of the responses available for interpretation. The scorers found it relatively easy to interpret and categorize responses in scoring; but in checking on themselves by rescoring booklets they often found that they had interpreted the same materials with equal confidence in very different ways. The scorers found that they could not be consistent in their interpretation of the responses and that the inconsistency was often not accompanied by any conscious realization of ambiguity.

A factor analysis of the scores listed in Table IX-11 did not appear to be justified. One of the categories, Educational Needs of Pupils, was chosen for use in the next section of this chapter. All 12 scores are included among the 165 variables considered in Chapter XII.

Relationships of Concerns and Values to Other Variables of the Study

In this section the relationships between a large number of other variables included in the study (superiors' ratings, ability test scores, in-basket test scores, etc.) and five selected categories--two from the instructional awareness area, two from the job performance values, and one background orientation category obtained from the examination booklets-- will be examined in detail. The five categories chosen are (1) Motivation-Pupil Interest and (2) Curriculum, representing the instructional awareness area, (3) Pupil Personnel and (4) Instruction and Curriculum, representing the job performance values, and (5) the background orientation category--Educational Needs of Pupils. The selection of these categories was based partly upon the results of an analysis to be reported in Section II of Chapter XIII. The first four categories have the highest loadings on certain factors which emerged from an over-all analysis of 120 variables from the entire study. Educational Needs of Pupils is one of the more reliably scored background orientation categories.

Table IX-12 presents the correlations between 32 in-basket scoring categories and the five measures.

There are a number of significant correlations in the table, although none exceeds .39. The highest correlations are those with the in-basket category Number of Words, (r = .30, .30, .34, .39 and .26) which may simply reflect the fact that both the in-basket task and responding to the kinescopes, tape recordings, and the examination booklets required writing within a restricted time period. The instructional awareness category Interest seems to be characteristic of principals who in their in-basket work rely upon face-to-face discussions, perhaps with the intention of involving their subordinates in their work. The remaining four categories (Curriculum, Pupils, Instruction, and Pupil Education) show a somewhat similar relationship with in-basket test work, but the relationship stresses to a greater degree communication, analysis, and involvement of outsiders. There is a tendency for many qualities of in-basket work to have slight relationships to the principal's scores reflecting his concerns and values.

Table IX-13 presents the correlations of Interest, Curriculum, Pupils, Instruction, and Pupil Education with 15 basic mental ability tests, four tests of professional and general knowledge, and the background achievement test.

TABLE IX-12. CORRELATIONS BETWEEN IN-BASKET CATEGORIES AND (1) TWO INSTRUCTIONAL AWARENESS CATEGORIES, (2) TWO PERFORMANCE VALUES, (3) AND A BACKGROUND ORIENTATION CATEGORY

In-Basket Category	Instructional Awareness		Job Performance Values		Background Orientation
	Interest	Curriculum	Pupils	Instruction	Pupil Education
1. Asks Subordinates	.14	.33	.23	.28	.26
2. Informs Subordinates	.14	.13	.24	.28	.11
3. Discusses with Subordinates	.27	.23	.15	.15	.19
4. Communicates Face-to-Face	.28	.23	.20	.21	.15
5. Decides on Procedure	.28	.23	.21	.20	.23
6. Concluding Decision	-.01	-.07	.15	.06	-.07
7. Follows Subordinates	.24	.05	.26	.16	.03
8. Terminal Action	-.10	-.15	-.03	-.13	-.09
9. Program Values	.06	.14	.22	.15	.16
10. Conceptual Analysis	.15	.23	.23	.15	.18
11. Superiors Involved	.09	.09	.12	.14	.06
12. Discusses with Superiors	.14	.24	.24	.21	.11
13. Outsiders Involved	.10	.15	.20	.25	.14
14. Relates to Other Materials	.16	.27	.21	.27	.22
15. Immediate Work Scheduled	.20	.07	.19	.18	.16
16. Intermediate Work Scheduled	.19	.18	.13	.17	.23
17. Informs Outsiders	.08	.18	.26	.32	.09
18. Follows Outsiders	.12	.05	.21	.13	-.02
19. Courtesy to Outsiders	.13	.20	.12	.24	.13
20. Leading Action	.03	.16	.02	.15	.20
21. Courtesy to Subordinates	.04	.09	.03	.10	.16
22. Directs	.11	.20	.09	.21	.19
23. Careless	-.03	.03	.01	-.09	-.04
24. Delays	.11	-.06	-.16	-.01	.05
25. Informality to Subordinates	.06	.01	.02	.03	.11
26. Number of Words	.30	.30	.34	.39	.26
27. Recognition for Good Work	.17	.14	.16	.10	.16
28. Prejudges	-.17	-.02	-.05	-.13	.04
29. Human Values	.18	.19	.13	.09	.16
30. Controlled Delegation	-.06	.02	-.03	-.08	-.04
31. Uncontrolled Delegation	-.06	-.03	-.09	-.14	-.09
32. Sets Deadline	.02	.09	.03	.17	.10

TABLE IX-13. CORRELATIONS OF INTEREST, CURRICULUM, PUPILS, INSTRUCTION, AND PUPIL EDUCATION WITH ABILITY TEST SCORES

Tests	Instructional Awareness		Job Performance Values		Background Orientation
	Interest	Curriculum	Pupils	Instruction	Pupil Education
Basic Mental Abilities					
Deduction	.07	.03	.08	.14	.02
Induction	.22	.22	.07	.18	.23
Number Facility 1	.32	.25	.32	.37	.19
Verbal Knowledge	.22	.18	.22	.31	.22
Speed of Closure 1	.22	.13	.19	.34	.20
Associative Memory 1	.08	.08	.11	.03	.02
Number Facility 2	.36	.23	.29	.41	.22
Flexibility of Closure	.18	.17	.14	.24	.11
General Reasoning	.21	.09	.19	.25	.11
Visualization	.14	.15	.04	.10	.02
Speed of Closure 2	.06	.00	.01	.14	.00
Word Fluency	.24	.24	.22	.32	.22
Expressional Fluency	.19	.20	.17	.24	.25
Ideational Fluency	.20	.23	.18	.29	.25
Associational Fluency	.20	.20	.20	.28	.24
Professional and General Knowledge					
Administration and Supervision	.33	.28	.25	.32	.24
Elementary Education	.33	.29	.28	.34	.28
Social Studies	.19	.20	.20	.36	.21
Science and Mathematics	.14	.07	.10	.22	.12
Background Total Achievement					
Background Achievement	.28	.07	.19	.20	.12

Although the five scores which reflect concerns and values were obtained from three different types of problem materials, their pattern of correlation with ability and knowledge tests is very similar. All show definite positive relationships with the Administration and Supervision Test (r = .33, .28, .25, .32, and .24) and the examination in elementary education (r = .33, .29, .28, .34, and .28). All have positive relationships with the two Number Facility tests, the Verbal Knowledge test, and the four tests involving fluency. The over-all pattern of relationship suggests that those principals who earned higher scores on these five categories tend to be well informed regarding professional issues and practices and fluent in expressing their reactions to the problems with which they were confronted.

Table IX-14 presents the relationship of the five scoring categories chosen to represent instructional awareness, job performance values, and background orientation with scores in the areas of basic personality factors, background orientation, and interests.

Again the patterns of correlations for the five representative scores are low, but they are somewhat similar. Principals who show concern on the two instructional awareness categories in response to the kinescope and those who score highest on the two job performance values tend to be more emotionally sensitive, and to have interests unlike those of policemen. They may also tend to approach the study of the background material with more of an orientation to the educational needs of pupils. This background orientation score (Pupil Education) shows a negative relationship with the personality Factor G, Character Strength (r = -.24) and a positive

TABLE IX-14. CORRELATIONS OF INTEREST, CURRICULUM, PUPILS, INSTRUCTION, AND PUPIL EDUCATION WITH BASIC PERSONALITY FACTORS, BACKGROUND ORIENTATION CATEGORIES, AND STRONG VOCATIONAL INTEREST BLANK SCORES

Test Score	Instructional Awareness		Job Performance Values		Background Orientation
	Interest	Curriculum	Pupils	Instruction	Pupil Education
Personality Factors					
A Friendly	.00	-.05	.10	.10	-.03
C Emotional Stability	.09	.06	.03	.06	.02
E Dominance	-.03	-.04	-.08	.02	.13
F Enthusiastic	-.01	.05	.03	.03	.11
G Character Strength	-.04	.02	.01	.00	-.24
H Adventurous	-.07	.01	-.02	.04	.03
I Emotionally Sensitive	.19	.09	.20	.19	.05
L Suspicious	-.08	-.01	-.03	-.03	-.16
M Non-Conventional	.09	.15	.08	.04	.21
N Sophistication	-.22	-.09	-.14	-.10	-.03
O Insecurity	-.01	-.08	-.03	-.12	.01
Q_2 Self-Sufficiency	.06	.06	-.02	.01	-.01
Q_3 Will Control	-.12	.06	-.06	-.02	-.11
Q_4 Nervous Tension	-.03	-.09	-.02	-.05	.01
Background Orientation Categories					
Pupil Education	.20	.24	.11	.19	1.00
Community Concerns	-.00	-.10	-.10	-.08	.08
Strong Vocational Interests Blank					
Psychologist	.10	.17	.02	.10	.17
Policeman	-.20	-.17	-.23	-.24	-.16
Public Administration	-.07	.04	-.13	-.02	.10
City School Superintendent	.07	.17	.15	.13	.04
Lawyer	.13	.05	.06	.05	.18

relationship with Factor M, Non-Conventional (r = .21). These relationships together with the pattern of correlations between Pupil Education and the interest test scores (psychologist, r = .17; lawyer, r = .18; and policeman, r = -.16) suggest that an orientation toward the educational needs of pupils is inconsistent with insistance on conventional behavior, strict observance of rules, or emphasis upon what is practical. Orientation toward the educational needs of pupils appears consistent with tolerance and recognition of individual differences.

Table IX-15 shows the correlation of the same five scores with other scores in the instructional awareness area and with other job performance values.

Except for the relationships involving the category score, Pupil Education, interest in the correlations presented in Table IX-15 is limited to the relationship of Interest and Curriculum scores with the performance values and the relationships of Pupils and Instruction with the instructional awareness categories. (The remaining correlations have been presented previously in Tables IX-2 and IX-7.)

There are a number of significant relationships between scores obtained by the three different methods--responses to kinescopes, answering questions following the tape recordings, and responses to questions concerning the background materials. The most comparable scores are the three which reflect concerns with the educational program from the point of view of the pupil; namely, Curriculum,

TABLE IX-15. CORRELATIONS OF INTEREST, CURRICULUM, PUPILS, INSTRUCTION, AND PUPIL EDUCATION WITH OTHER CATEGORY SCORES OF INSTRUCTIONAL AWARENESS AND WITH OTHER JOB PERFORMANCE VALUES

	Instructional Awareness		Job Performance Values		Background Orientation
Category Scores	Interest	Curriculum	Pupils	Instruction	Pupil Education
Instructional Awareness Categories					
Objectives	.29	.57	.07	.25	.37
Evaluation	.26	.47	.12	.22	.38
Planning	.33	.48	.11	.18	.28
Curriculum	.34	1.00	.17	.29	.24
Participation	.67	.33	.26	.39	.19
Interest	1.00	.34	.24	.31	.20
Growth	.35	.42	.28	.28	.29
Methods	.45	.42	.23	.29	.16
Materials	.30	.54	--	--	.30
Personality	.48	.21	.19	.22	.11
Classroom	.30	.24	.06	.12	.15
Climate	.37	.29	.24	.25	.09
Job Performance Values					
Instruction	.31	.29	.58	1.00	.19
Pupils	.24	.17	1.00	.58	.11
Employees	.22	.10	.51	.47	.08
Physical	.13	.13	.36	.34	.02
Structure	.28	.21	.43	.41	.07
Public	.21	.02	.38	.27	.05

Instruction, and Pupil Education. These three scores show the following interrelationships:

	1	2	3
1. Curriculum	--	.29	.24
2. Instruction	.29	--	.19
3. Pupil Education	.24	.19	--

These small positive correlations indicate some overlap between the scores from the three areas, but do not provide much support for the assumption of a general all around alertness on the part of principals to the problems relative to the educational program. Rather, it would appear from the entire set of relationships presented in Table IX-15 that a principal's concerns or values tend to be focused in specific areas; the fact that he is concerned with problems relative to pupil interest in the classroom, for example, does not mean that he is concerned about pupil personnel problems in general.

Table IX-16 presents the correlations of Interest, Curriculum, Pupils, Instruction, and Pupil Education with the scores from the interaction situation and with five biographical variables. High scores on all five of the measures appear to be earned more frequently by women principals than by men. The correlation between frequency of giving positive information in the group interaction situation and interest possibly may be understood as an additional expression of emotional sensitivity of the principal who scores high on the category of instructional awareness. Perhaps of most significance is the general lack of substantial relationship between the five measures of concern and the biographical variables reflecting experience and academic preparation. It is worth noting, however, that the three categories of instructional awareness have high loadings on the instructional awareness factor. Concern for the Education Program does show some relationship with both total years of experience in

TABLE IX-16. CORRELATIONS OF INTEREST, CURRICULUM, PUPILS, INSTRUCTION, AND PUPIL EDUCATION WITH THE GROUP INTERACTION CATEGORY SCORES AND WITH BIOGRAPHICAL INFORMATION

Score or Variable	Instructional Awareness		Job Performance Values		Background Orientation
	Interest	Curriculum	Pupils	Instruction	Pupil Education
Group Interaction Categories					
Frequency of Interaction	-.01	-.04	-.14	.00	.04
Gives Positive Information	.28	.08	.02	.07	.09
Asks for Information	.00	.06	.02	.02	.09
Suggests New Procedures	.07	-.01	-.12	-.02	.05
Presents Facts Effectively	.06	.01	.01	.09	.03
Makes Decisions Effectively	.12	-.02	-.01	.18	.05
Amount of Talking	.13	.06	.07	.14	.08
Attempts to Influence	.04	.06	.04	.09	.10
Biographical Information					
Total Experience	.04	.17	.14	.07	.18
Administrative Experience	-.05	.15	.06	.07	.04
Academic Preparation	.05	.12	-.06	-.02	.07
Age	-.02	.09	.08	.04	.13
Sex (Male=1, Female=2)	.23	.28	.31	.26	.21

education and years of administrative experience. These correlations involve categories other than the five selected categories we have been considering. The correlations are as follows:

	Total Experience	Administrative Experience
Objective	.25	.23
Evaluation	.27	.26
Planning	.27	.16

Experience may lead to concern with the educational program; but it apparently does not raise other areas of instructional awareness as measured by the scoring of responses to the kinescopes.

Table IX-17 presents the correlations of Interest, Curriculum, Pupil, Instruction and Pupil Education with various ratings that were made as evaluations of the principal's performance.

Although the five scores have generally positive relationships with the superiors' ratings, they differ markedly in the degree of the relationship. Four of the five relate significantly to the item Knowledge of Teaching (r = .20, .17, .31, .30 and .05). In the case of the item, Interest in Work, the relationship is .30 with the score Pupils but only .08 with Interest and .04 with Pupil Education. One explanation for these apparent differences may lie in the basic nature of the difference between the problems presented by tape recordings, the kinescopes, and the examination booklets. The first had far more to do with issues in which a superior might have a direct interest than did the latter two.

The in-basket scorers' rating is positively related to each of the scores (r = .24, .24, .25, .34, and 21).

In summary of the correlations presented in discussion in this

TABLE IX-17. CORRELATIONS OF INTEREST, CURRICULUM, PUPILS, INSTRUCTION, AND PUPIL EDUCATION WITH PERFORMANCE EVALUATIONS

Performance Evaluation	Instructional Awareness		Job Performance Values		Background Orientation
	Interest	Curriculum	Pupils	Instruction	Pupil Education
Superiors' Ratings					
Interest in Work	.08	.10	.30	.16	.04
Sticking to a Job	.00	.04	.17	.11	.02
Getting Along with Teachers	.07	.06	.18	.08	.04
Getting Along with Parents	-.04	-.03	.17	.05	-.05
Getting Along with Supervisors	.02	.07	.19	.11	-.09
Knowledge of Administration	.06	.10	.20	.20	-.01
Knowledge of Teaching	.20	.17	.31	.30	.05
Rapport with Children	-.02	-.02	.07	-.08	.03
Written Communication	.09	.08	.23	.21	.02
Understanding	.14	.10	.22	.23	.04
Oral Communication (Informal)	.13	-.04	.22	.21	.02
Over-All Impression	.09	.08	.21	.15	-.04
Teachers' Questionnaire Score					
Consideration	.12	.08	.12	.08	.00
Initiating Structure	.10	.06	.06	.09	.05
General Reaction	.17	.12	.16	.12	.03
Staff Members' Ratings					
Over-All Impression	.05	.03	.06	.16	-.03
In-Basket Scorers' Ratings					
Over-All Impression	.24	.24	.25	.34	.21

section, two general features of the relationships stand out. First, there is a low but positive relationship of scores on the measures of concerns and values with many other variables of the study. Second, concerns in this broad area, as measured by the methods employed in this study, do not appear to be general but rather relatively specific to the context of the problems.

CHAPTER X

PERFORMANCE ON TASKS INVOLVING SOCIAL INTERACTION AND SPEAKING BEFORE A GROUP

In this chapter, two tasks that required speaking rather than writing will be described and discussed. The first task was a group interaction or committee problem. The record of each individual's performance consisted of systematic observations made by members of the research team, and ratings obtained from the participants regarding their impressions of one another's performance. The second task consisted of giving a speech to the local Whitman School Parent Teachers Association. The speech was recorded on tape and later evaluated as it was replayed. Both tasks permitted the principals to display their effectiveness in areas not observable in written products of performance.

The Group Interaction Problem

School administrative positions make large demands on the administrator's time for face-to-face discussions. Some implications concerning the probable style of face-to-face behavior of the 232 Marion Smiths can be drawn from their performance on in-basket items; e.g., the frequency with which they plan to discuss problems with subordinates before action. It was believed, however, that a more direct measure of their effectiveness in a small group situation was desirable. Accordingly, Wednesday and Thursday evenings of the test week were set aside for small group meetings.

The Task

On Wednesday of test week, at the end of the afternoon's work, the principals were randomly assigned to five-person groups. After dinner these groups met in separate rooms. Each room was furnished with a table and seven chairs. Place markers, corresponding to numbers on the assignment cards distributed earlier, indicated where each participant was to sit. A sixth chair at the table was occupied by a staff member who functioned as the experimenter and the last chair was occupied by the observer, who sat away from the table in such a position that the experimenter could receive a signal from him at the end of each five minutes. This signal permitted coordination of the data collected by the two staff members.

As the subjects entered the room, they were asked to take the places at the discussion table indicated on their assignment cards. After everyone was seated, the experimenter opened the meeting by saying:

> "This evening each of you is to be one of the principals in the Jefferson school system. It doesn't matter much which one you are. The situation is this. Due to the excellent work Marion Smith did during the past year at Whitman School and the excellent qualifications he had for a new position in the Central Office as Special Coordinator of the Elementary Schools, he was given this new assignment. A new principal for Whitman School must be employed. You are the members of a special committee that has been appointed to assist Dr. Donnelly in making a selection. Your committee had one previous meeting with Dr. Donnelly and Dr. Seward and have screened the records of about 12 candidates and reduced the number to three.
>
> "Beginning right now, I shall play the role of Mr. Davies,

the Business Manager.

"I would not normally meet with this committee, but Dr. Seward is ill and Dr. Donnelly had to leave unexpectedly this afternoon for a special meeting this evening in Lake City. He asked me to chair the meeting and requested that I make detailed notes for a report to him. He desired that we try to reach a decision on which candidate we want to recommend to the Board. Mr. [the observer] is not part of the group, but is merely observing our work this evening. He will not take part in any discussion and should not be addressed by any of you.

"Before she became ill yesterday afternoon, Dr. Seward prepared a summary of the records of the candidates we have. She went over the letters of recommendation and other materials in the folders and prepared a summary and abstract on each one. She thought we might start the meeting with a review of these records. I have a copy for each of you. Perhaps we should take 12 minutes and let each of you get reacquainted with the candidates."

The experimenter then distributed one set of candidates' credentials to each of the five subjects for their study. Twelve minutes later, at a signal from the observer, the experimenter said:

"I guess we had better get started. Now I don't know much about what you do in deciding on a candidate and I think I should stay out of the discussion. I'll make notes and let you do the deciding."

The set of credentials were designed to be the basis for the discussion. Each of the three candidates was presented with both positive and negative qualifications, and each, at the over-all level, appeared about equally well qualified. The 12 areas of the principals' job that were used in the construction of the in-basket test items (see Chapter IV) were used in constructing the set of credentials. Statements in the credentials of each candidate included negative comments in four of the 12 areas and positive comments in the remaining eight. The set of three credentials was so patterned that the four areas of negative comments were different for each candidate. Materials used in preparing these credentials, with minor modifications, were taken directly from annual performance reports that had been prepared for all principals employed in one large school system. These statements, therefore, were worded in the guarded, if not ambiguous, language that is typical of real performance reports.

The selection problem which the principals faced was not unfamiliar to them, although the choice of new teachers rather than of a new principal was more common. The problem allowed them to bring to mind their experiences, values, and attitudes concerning school principals in general and their particular perceptions concerning the requirements of a principalship in Whitman School specifically. By this time in the test week the principals had not only experienced a day and a half of exposure to background information but had also worked through two of the three school in-baskets.

The role of the experimenter at the discussion table was consistent with the picture of Mr. Davies, the Business Manager, as depicted in the background information, which made it easier for him to remove himself from the discussion. Only rarely in the course of these discussions were remarks addressed to the experimenter.

Data Collection

As the discussion developed, the experimenter and observer made different types of records of group member interaction. The observer's task was to tally each comment of a participant under one or more of the categories shown on the Categories of Interaction Form. This form consisted of 17 categories which are briefly described below:

1. GIVES POSITIVE INFORMATION OR OPINIONS: Refers to any positive information given about a candidate, or to any support of a candidate. If the subject is obviously being satirical, it is not scored here. Examples:
   a. "X seems qualified in many ways."
   b. "X has shown real talent in raising the level of the instructional program."

2. GIVES NEGATIVE INFORMATION OR OPINIONS: Refers to any negative information given about a candidate, or to any attack made against a candidate. Examples:
   a. "X has had some trouble with discipline problems."
   b. "X is certainly not the one for this job."

3. SUPPORTS OTHERS' ARGUMENTS: Refers to any agreement of one member with another's arguments, points, or suggestions.
   Examples:
   a. "Yes, that's true."
   b. "I agree; furthermore...."

4. QUESTIONS OR OPPOSES ARGUMENTS OF OTHERS: Refers to any question of or opposition to an argument, point, or suggestion made by another member. Examples:
   a. "Are you sure that what you said of X's administrative ability is true?"
   b. "I don't agree that X has done much in the area of good parent relations."

5. GIVES INFORMATION NOT RELATED: Refers to any information offered that does not relate specifically to the qualifications of the candidates. Refers also to answers to questions not positive nor negative about a candidate, whether related or not. Examples:
   a. "The parents in the community are very interested in education."
   b. "Whitman School draws students from both sides of the railroad tracks."

6. ASKS FOR INFORMATION: Refers to asking others for information about a candidate in a non-facetious way and in a manner that suggests that the question is not a "leading" one aimed at subtly tearing down or building up the candidate in question. Examples:
   a. "How old is X?"
   b. "What grades has X taught?"

7. SUGGESTS PROCEDURES: Refers to any attempt of a member to have others of the group follow a procedure which he suggests. Examples:
   a. "Why don't we go about this logically, and decide first what qualities we're looking for in a candidate?"
   b. "Why don't we go about this by a process of elimination?"
   c. "How about getting organized?"

8. SUGGESTS A ROLE: Refers to any attempt of a member to assign a specific role to himself or to any other member. Examples:
   a. "Now, I'll go around the table asking questions."
   b. "Why don't you write down these suggestions, Mr. ---?"

9. REMINDS ABOUT TIME: Refers to any attempt of a member to speed up or slow down activity of the group by mentioning the present time, the time limit of the discussion, etc. Examples:
   a. "It's now 8:30--we'll have to move more quickly if we're to finish."
   b. "Now let's not rush things; its only 8:30 and we have plenty of time in which to do this thing efficiently."

10. MAKES POSITIVE PERSONAL REMARKS: Refers to any personal remarks made in praise of other group members. Examples:
    a. "Mr. ---, I think that's an excellent idea."
    b. "I like the sensible way you're going about this, Mrs. ---."

11. MAKES NEGATIVE PERSONAL REMARKS: Refers to any personal remark directed against a group member in criticism of him. Examples:
    a. "I don't think your thinking is sound there, Mrs. ---."
    b. "I feel that you're all disorganized in your thinking here."

12. DISTURBING INTERRUPTION: To be scored here, the interruption must be acknowledged by the original speaker; talker must stop, or slow down, or in some way must acknowledge the interruption.

13. RAISES NEW ISSUES: Refers to any attempt on the part of a member to raise a new issue or to change the topic at hand. Examples:
    a. "We haven't yet discussed the question of whether or not we would prefer somebody from within the system."
    b. "What about the problem of the particular needs of the Jefferson school system and how each candidate would fill these?"

14. SUGGEST CRITERIA: Refers to any attempt of a group member to advance specific criteria for the evaluation of candidates. Examples:
    a. "I think that the candidate we finally decide upon should have as many as possible of the following qualifications: ...."
    b. "I feel that the man chosen must at least possess insight into the problems of his staff."

15. **SUMMARIZES:** Refers to any attempt of a group member to summarize any earlier discussions. Examples:
    a. "Now, thus far, we have arrived at the following conclusions: ...
    b. "So far today we have discussed this: ...."
    This category is also used when a member mentions need for information. Example.
    a. "We need more information on Mr. A. ...."

16. **ATTEMPTS A FINAL DECISION:** Refers to any attempt to end the entire discussion by trying to make a final decision for the group. Examples:
    a. "I think we have talked long enough and have made it clear that X is the best man for the job. Why not end it here?"
    b. "I propose that X be selected for the post. Shall we put it to a final vote?"

17. **OUT OF THE FIELD:** Refers to any comments made which have no relevance at all to the discussion at hand. Examples:
    a. "Gee, it's awfully hot in here."
    b. "What are you doing tonight?"

A taped recording of a discussion was made and used to train observers. Separate records of interaction performance were made for each five-minute period. Since he was *outside the group but in view of* the experimenter, the observer functioned as timekeeper. Every five minutes the observer took a new Categories of Interaction Form and signaled the experimenter to change his record form also. The observer also kept a record of any final decision reached by the group and the time such a choice was made.

When the experimenter had given the signal for the start of the discussion by saying, "I'll make notes and let you do the deciding," he devoted himself to keeping the Interaction Record. This form, was a simple device for recording in graphic form the frequency of comments made by each participant and to whom each comment was directed. A single comment was defined as an uninterrupted speech or verbal contribution to the group's discussion. A comment might consist of one or many sentences and might occupy little or much time. In cases where interruptions took place, both speakers were scored for a comment, and if the interrupted speaker acknowledged the interruption and resumed speaking, he was scored twice.

The Interaction Record depicts the seating arrangement of the participating group around the conference table: the experimenter was represented by a circle at the head and the subjects by circles numbered consecutively around the table. Each comment during the group discussion was noted by the experimenter in one of two ways. If it was directed at a single person, the experimenter drew an arrow from the circumference of the circle representing the speaker to the circumference of the circle representing the individual addressed. If the comment was directed to more than one person, the experimenter drew arrows from the circle representing the speaker to the center of the group. Every comment made in the presence of the group was recorded, regardless of who was addressed.

After 25 minutes of discussion, at the end of the fifth five-minute period, the experimenter said:

> "I wonder if we can try to wind up things in another five minutes? Let's try to make some positive report to Dr. Donnelly."

The sixth and last recording period followed, at the end of which the discussion was terminated with an expression of thanks for their work by the experimenter, still in Mr. Davies' role.

At the close of this discussion, each principal, the observer, and the experimenter, filled out a Group Report Form in which he rated each of the five participants, including himself, on six five-point rating scales:

A. How effective was this member in presenting facts about the qualifications of candidates?

B. How effective was he (she) in assisting the group in reaching some decision during the discussion?

C. How extensively did he talk in the group's discussion?

D. How often did he agree with suggestions made by others?

E. How often did he try to influence others to adopt his point of view?

F. How friendly did he appear to be?

Scores for a principal were determined by first obtaining a sum of the ratings made by his four associates. These sums were then converted into scores ranging from one (low) to nine (high). Ratings made by the principal concerning his own behavior were excluded from this score.

Consistency of Performance in Group Interaction

Situational tests of skill in group interaction have an important and well-known limitation: what an individual does in a group is in part a function of the others who are in the group with him. Each observation or measurement that is made in a small group interaction situation is in some degree a product of all the members of the group. It would easily be possible to gain an erroneous impression of the skill in group interaction of a somewhat retiring individual if he happened to be assigned to a group composed of extremely dominant individuals, or of a woman principal should she be assigned to a group along with four men. An effort was made to assess the consistency of individual performance in group interaction across groups as a basis for selecting categories for use in further analyses of the data.

In order to determine which, if any, of the 24 measures from the group interaction situation would show consistency across groups, 70 principals in the study repeated the problem on Thursday evening. Insofar as it was possible, within the limits imposed by assigning approximately 20 people to five-person groups, the principals were assigned to new groups on the second evening. The experimenter and observer were also changed. The problem used for the second group session was identical with the one used first except that the credentials described a new group of three candidates.

For these 70 cases, correlations were computed between the Wednesday and Thursday scores on each of 24 variables. These variables included the frequency of interaction scores as tallied by the experimenter, 17 categories from the observer's Interaction Record,1/ and the six rating scores from the Group Report Form.

Table X-1 presents the means, standard deviations, and correlations between the two sets of scores for the 70 principals. Correlations that are starred in Table X-1 are significant at or beyond the .05 level. Twelve categories met the criterion of showing consistent relationship between the two days. Many of the 12 categories that did not meet this criterion were used very infrequently (e.g., Reminds about time or Makes negative personal remarks). Other categories may have failed to show consistency either because of the changes in group composition or because of unreliability in the scoring of the

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1/ These scores were the sum of the frequency with which the behavior was tallied over the six periods. If a decision was reached before the sixth period an adjustment of the scores was made to compensate for the shorter period of time.

TABLE X-1. MEANS AND STANDARD DEVIATIONS OF 24 GROUP INTERACTION SCORES AND THE CORRELATION OF WEDNESDAY'S SCORES WITH THURSDAY'S SCORES
(N = 70)

Category	Wednesday		Thursday		Correlation between Wed. and Thurs. Scores
	Mean	S.D.	Mean	S.D.	
Frequency of Interaction	39.56	18.73	46.03	28.60	.43*
Gives Positive Information	9.67	5.84	8.93	5.47	.47*
Gives Negative Information	6.00	4.20	5.73	4.21	.52*
Supports Others	5.37	4.40	5.71	4.56	.35*
Questions or Opposes Others	4.30	3.76	4.06	3.58	.52*
Gives Information Not Related	3.20	2.56	2.49	2.36	.17
Asks for Information	2.87	3.31	2.50	2.90	.26*
Suggests New Procedures	1.41	1.80	1.53	1.97	.32*
Suggests a Role	.19	.46	.19	.52	.22
Reminds About Time	.07	.26	.24	1.18	.13
Makes Positive Personal Remarks	.04	.20	.04	.26	.00
Makes Negative Personal Remarks	.01	.12	.20	1.21	.00
Disturbing Interruption	4.50	4.80	3.86	4.21	.23
Raises New Issues	1.70	3.08	2.04	2.79	.20
Suggests Criteria	2.50	2.55	1.66	1.76	.21
Summarizes	.54	1.52	.21	.56	.00

TABLE X-1. MEANS AND STANDARD DEVIATIONS OF 24 GROUP INTERACTION SCORES AND THE CORRELATION OF WEDNESDAY'S SCORES WITH THURSDAY'S SCORES (CONT'D)
(N = 70)

Category	Wednesday		Thursday		Correlation between Wed. and Thurs. Scores
	Mean	S.D.	Mean	S.D.	
Attempts Decisions	.27	.53	.30	.68	-.03
Out of Field	.50	1.27	.61	1.30	.32*
Effectiveness in Presenting Facts	5.06	2.87	4.94	2.87	.30*
Effectiveness in Making Decisions	5.03	2.86	5.03	2.74	.12
Amount of Talking	4.97	2.81	4.91	2.77	.36*
Agreement with Suggestions	5.09	2.81	5.03	2.81	.13
Attempts to Influence	5.06	2.88	4.96	2.85	.39*
Friendliness	5.14	2.73	4.97	2.70	.28*

categories. The correlations in Table X-1 may be viewed as test-retest reliability estimates. Ten of these categories were selected for further analysis.

Factor Analysis of the Group Interaction Category Scores

The 10 group interaction scores do not measure entirely independent areas of performance in group situations, as is shown in Table X-2, which presents the intercorrelations among the 10 scores from the group interaction situation.

The highest correlations in Table X-2 are, generally speaking, those in the lower right-hand quadrant of the table, which contain the intercorrelations of the ratings. A certain amount of halo probably accounts for the generally high correlations among the ratings. However, Friendliness is generally unrelated to the other ratings and to the other variables, possibly because of its low reliability.

The intercorrelations of the experimenter's and observer's categories also tend to be positively correlated, but probably not because of halo. The highest correlations are those involving Frequency of Interaction. The score Raises New Issues correlates significantly with no other variable; it is the lowest of the categories in reliability.

That the correlations are not all due to halo or test form influences is shown by the correlations in the lower left part of the table--the correlations between ratings and observer records. The correlation of .50 between Frequency of Interaction and Amount of Talking shows that the rating has some validity. Principals who make many comments tend to be rated as effective in presenting facts

TABLE X-2. INTERCORRELATIONS AMONG 10 SCORES FROM THE GROUP INTERACTION SITUATION*

Category	1	2	3	4	5	6	7	8	9	10
Frequency of Interaction		.05	-.05	.00	.04	-.02	.00	.03	-.03	.02
Gives Positive Information	.37		.03	-.06	-.03	-.02	.02	.03	-.01	.04
Asks for Information	.23	.25		.02	.04	.04	-.02	-.05	.02	-.05
Suggests New Procedures	.38	.18	.28		-.07	.00	.01	-.01	.02	-.01
Raises New Issues	.15	-.12	.07	.04		-.00	.01	.02	-.00	.02
Presents Facts Effectively	.31	.21	.18	.33	.15		.02	-.01	.00	-.05
Makes Decisions Effectively	.24	.22	.11	.31	.13	.66		-.01	.00	.01
Amount of Talking	.50	.34	.08	.31	.12	.53	.42		.01	.04
Attempts to Influence	.39	.30	.09	.26	.05	.44	.31	.66		-.02
Friendliness	-.06	-.02	-.01	.02	.07	.03	.15	-.08	-.21	

* Residual correlations are listed above the diagonal in this table.

TABLE X-3. FACTOR MATRICES FOR 10 GROUP INTERACTION CATEGORIES

Category	Unrotated Orthogonal Factor Matrix				Rotated Oblique Factor Matrix				h^2
	I	II	III	IV	A	B	C	D	
Frequency of Interaction	.60	-.23	.22	.17	.35	-.12	.42	.38	.50
Gives Positive Information	.44	-.23	.23	-.32	.10	.02	.38	-.04	.40
Asks for Information	.27	-.04	.44	.01	-.08	.00	.48	.30	.27
Suggests New Procedures	.50	.03	.30	.12	.08	.10	.39	.34	.35
Raises New Issues	.14	.16	-.01	.35	.09	.06	-.02	.29	.17
Presents Facts Effectively	.73	.34	-.11	-.03	.13	.52	-.02	.01	.66
Makes Decisions Effectively	.65	.49	-.06	-.13	-.07	.67	-.03	-.07	.68
Amount of Talking	.78	-.16	-.22	.04	.56	.07	.02	.04	.68
Attempts to Influence	.69	-.31	-.30	.00	.64	-.06	-.04	-.04	.66
Friendliness	-.04	.36	.15	-.02	-.34	.31	.04	.04	.15

and as frequently trying to influence others. Gives Positive Information and Suggests New Procedures both have relatively high correlations with some of the ratings.

In order to achieve a better understanding of the relationships among the 10 group interaction scores, a factor analysis of the full matrix of intercorrelation was made. This analysis proceeded by estimating communalities as equal to the highest correlation in the row or column and obtaining the characteristic roots and vectors of the matrix. Inspection of the size of the 10 roots led to the decision to compute loadings for the four largest factors. Table X-3 shows the unrotated orthogonal factor matrix and the rotated oblique matrix. Residual correlations (presented above the diagonal of Table X-2) are small.

Rotations from the orthogonal factor matrix to the oblique factor matrix were guided by the criteria of simple structure and were done by inspection of successive plots of the loadings of the category scores on pairs of factors. The transformation matrix and the intercorrelations among the oblique factors are given in Table X-4.

The four factors show a very mixed pattern of both positive and negative correlations, ranging from -.57 for Factor C with D to .61 for A with B. These interrelationships will be examined after the Factors A through D have been identified.

Only a tentative interpretation of the four factors in the group interaction data will be attempted here. Subsequent examination of the relationships between key categories in these factors and other variables in the study will add to the understanding of these factors.

TABLE X-4. FOUR FACTORS FROM THE ANALYSIS OF CATEGORIES OF GROUP INTERACTION

Transformation Matrix					Intercorrelations				
Factor	A	B	C	D	Factor	A	B	C	D
I	.42	.27	.24	.16	A	1.00	.61	.44	-.18
II	-.65	.89	-.27	-.07	B	.61	1.00	.30	.10
III	-.52	-.07	.93	.57	C	.44	.30	1.00	-.57
IV	.37	-.36	.00	.80	D	-.18	.10	-.57	1.00

Factor A has loadings of ±.25 on the following four interaction category scores:

Attempts to Influence	.64
Amount of Talking	.56
Frequency of Interaction	.35
Friendliness	-.34

This factor involves a high level of interaction which is perceived by the group members as attempting to persuade them to adopt a point of view. The behavior described by this factor cannot be called effective leadership, either from the viewpoint of the group members or the observers. It is bipolar with negative loadings on Friendliness. This factor has been called Attempted Group Domination.

Factor B has loadings above .25 on the following three category scores:

Effective in Group Decision	.67
Presents Facts Effectively	.52
Friendliness	.31

This factor is related to perceived effectiveness by the group, but it is not significantly related to the observed behaviors of developing facts, suggesting procedures, and raising new issues. It is related to perceived friendliness and may reflect maintenance of good personal relationship in the group rather than direct effectiveness on the issues under discussion. It has been labeled Perceived Effectiveness.

Factor C has loadings above .25 on four categories:

Asks for Information	.48
Frequency of Interaction	.42

Suggests New Procedures	.39
Gives Positive Information	.38

Factor C seems to have three interrelated facets: a high rate of interaction, exchanging information (both giving and asking), and suggesting procedure. To the extent that the observer and experimenter were observing the same behavior, high scores on asking and giving information could not appear without high scores on frequency of interaction also. Factor C might be characterized as observed participation through developing facts and suggesting procedure. The behavior that this factor covers is apparently not perceived as effective participation by group members. It has been entitled Observed Participation by Developing Facts.

Factor D has loadings of above .25 on the categories of interaction which follow:

Frequency of Interaction	.38
Suggests New Procedures	.34
Asks for Information	.30
Raises New Issues	.29

This factor appears to be related to behavior which center on intermediate processes rather than the final decision which the group must make. Raises New Issues rather than Gives Positive Information distinguishes this from the preceding factor. Factor D has been called, tentatively, Observed Participation by Raising New Issues.

It will be recalled that these four factors showed a complicated pattern of positive and negative intercorrelations (Table X-4). Factors A and B were correlated positively (r = .61) and C and D negatively (r = -.57). Perceived Effectiveness and Attempted Group

Domination have a common core. This common element may be amount of attempted leadership, but the manner in which leadership is attempted seems to distinguish Perceived Effectiveness from Group Domination. Friendliness has positive loadings on Perceived Effectiveness but negative loadings on Attempted Group Domination. Simply stated, if an attempt to lead is perceived as done in a friendly manner, the behavior tends to be seen as effective; otherwise, attempting to lead is equated with attempting to influence by domination.

The negative relationship between Factor C and D suggests two perhaps antagonistic modes of group participation. Giving positive information is supporting of the ongoing course of group action while raising new issues tends to be disruptive of the group procedure. These two modes of behavior appear to characterize different people.

In the next section of this chapter, the performance of the principals on the speech task will be described. In the third and last section, both group interaction performance and speech performance will be examined in relationship to other variables of the study.

Speech Performance

The elementary school principal's job characteristically involves speaking before others, both formally and informally. While some implications concerning the oral communication skill of the 232 Marion Smiths might be inferred from their in-basket performance and some of the ratings made by their superiors, direct evidence concerning their oral communication skill was obtained from the tape recording of the speech to the P.T.A.

The P.T.A. Speeches

As was described in Chapter II, three tasks were given the principals on Tuesday afternoon. Two of these, the writing tasks, were assigned at the start of the afternoon's activities. The third task was the preparation and delivery of a 10-minute speech to the local P.T.A. on the topic, "The Value of Education in America." Rooms had been equipped to record on tape the principals' speeches. Beginning at 2:00 p.m. and at intervals of 15 minutes thereafter, instruction cards were given to four principals at a time. Each card assigned the topic, stated that the principal had 45 minutes to prepare his speech, and indicated that a staff member would escort him to a room where his speech would be recorded.

At the appointed time, a staff member escorted the principal to the room and set the stage by playing the role of the P.T.A. program chairman announcing the speech. The following introduction was used for all subjects:

> "Good afternoon. We are pleased to have our new principal Marion Smith with us today. He (she) will speak to us on the topic, 'The Value of Education in America.' Marion Smith."

After nine minutes, a signal was given the principals who were still speaking to indicate that they had one minute left. Except for this warning, the principals were left alone in the room during the delivery of the speeches.

Data Collected from the Speeches

Scoring categories were set up and the tape recordings of the principals' speeches were scored by a staff member of the Teachers College Speech Department.2/ The categories largely ignored the content of the speeches and attempted to get at variables in speaking

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2/ Currie, Fergus, Instructor in Teaching of Speech.

skills. Ten categories were used, nine of which were composed of from two to seven weighted indicators which defined the category. The categories, their component indicators, and the weights attached to each of these appear in Table X-5.

The weights shown in Table X-5 were applied to a five-point rating made by the scorer for each indicator, and the sum became the score for the category. Rating five was defined as high and one as low. The score for a category was the weighted sum of the indicators. Few principals utilized the full 10 minutes that they were given. Fifteen of the 232 recordings were blank or completely unusable, thus reducing the total number of principals for whom speech data were available to 217.

Estimates of Consistency of Performance and of Judging

Two procedures were used to estimate the reliability of speech scores.

First, an over-all estimate of reliability was made by selecting 10 of the records at random for scoring by two additional judges. Both of the additional judges were members of the speech faculty of a university. Both had taught public speaking in high school and college. The correlation between the total score (obtained by summing the nine categories) given to a speech between the principal scorer and one of the additional judges was .78 and for the other .66. There appeared to be some consistency between judges in their appraisals of the speeches.

Second, an estimate of the reliability (internal consistency) of the individual category scores was made by splitting the indicator within each category into two halves, each contributing as nearly as possible the same weight to the category score. For example, the three indicators for the category Clarity and Impressiveness were

TABLE X-5. SPEECH CATEGORIES AND THEIR WEIGHTED COMPONENTS

Speech Category	Component Indicator	Scoring Weights
Length of Speech	(obtained directly from tape recording in minutes)	
Effectiveness of Introduction (Audience Rapport and Organization)	a. Gained attention and stimulated interest	3
	b. Created good will and respect	2
	c. Associated topic with audience and occasion	2
	d. Provided background and definitions	3
	e. Stated central idea of speech	3
Organization of Body	a. Made purpose of speech clear	3
	b. Developed according to a plan	3
	c. Used relevant supporting material	3
	d. Contained ethical proof	1
	e. Contained emotional proof	1
	f. Contained logical proof	1
	g. Transitions	2
Effectiveness of Conclusion	a. Focused on central idea	3
	b. Indicated purpose of speech	1
	c. Provided climax	2
Proper Word Usage (Arrangement of Words)	a. Precise meanings	3
	b. Variety in sentences	1
	c. Acceptable grammar	3
	d. Avoided excessive non-fluencies	1
Clarity and Impressiveness (of Language)	a. Intelligible and concrete	3
	b. Varied word selection	2
	c. Avoided trite phrases and loaded words	1
Voice Control	a. Voice transmitted meaning	2
	b. Voice transmitted emotion and sincerity	2
Voice Interest	a. Projection	1
	b. Pitch and intensity (range)	2
	c. Variable and pleasant voice	3
	d. Rate and phrasing of delivery	3
Pronunciation	a. Proper form and use of sounds	2
	b. Used acceptable pronunciation	3
Interest and Efficiency	a. Relevant use of humor	1
	b. Avoided apologies, excuses	1
	c. Made speech interesting to hearers	3
	d. Appropriate proportioning of time	2

divided by placing the indicator "Intelligible and concrete" in one half (weight = 3) and the two indicators "Varied word selection" and "Avoided trite phrases and loaded words" in the other half (sum of weights = 3). These estimates of reliability, based on the correlations between the two halves and corrected by use of the Spearman Brown formula, reflect the consistency with which the indicators within a category score were rated by the single rater.

Table X-6 presents the means and standard deviations for each of the 10 speech categories and the estimate of the reliability of each of the scores.

No completely satisfactory measures of reliability of scoring the individual speech categories are available. The correlation between total scores obtained by two judges is inadequate because (1) it reflects only rater agreement and (2) it makes use of a total score only (which is not used in the analysis). The internal consistency measures, based as they are on only one sample of behavior of each principal cannot tell us about the consistency of the behavior of the principal but only the extent to which the rater agreed with himself. The estimates presented in Table X-6 represent an upper limit on the reliability that might have been attained.

Factor Analysis of Speech Category Scores

Table X-7 presents the matrix of intercorrelation among the 10 speech categories. A factor analysis was made of these correlations in order to understand better the nature of interrelationships among the scores.

Communalities were estimated as equal to the highest correlation in the row or column associated with the category. The roots and vectors of the complete correlation matrix were then computed. Inspection of the roots suggested retaining three factors. Table X-8

TABLE X-6. MEANS, STANDARD DEVIATIONS, AND ESTIMATED RELIABILITY OF 10 SPEECH CATEGORY SCORES
(N = 217)

Category	Mean	Standard Deviation	Estimated Reliability
Length	6.96	2.50	---
Introduction	29.44	6.81	.64
Organization	29.23	8.45	.90
Conclusion	11.90	4.48	.85
Word Usage	20.80	3.44	.79
Clarity	14.52	3.09	.88
Voice Control	9.17	2.49	.86
Voice Interest	18.68	4.06	.79
Pronunciation	12.72	2.69	.70
Efficiency	14.99	3.40	.60

TABLE X-7. INTERCORRELATIONS BETWEEN 10 SPEECH CATEGORY SCORES*
(N = 217)

Category	1	2	3	4	5	6	7	8	9	10
Length		.00	-.03	-.10	.02	.02	-.02	-.03	.08	.05
Introduction	.34		.04	-.06	.01	-.02	-.01	-.02	-.01	-.06
Organization	.35	.70		-.04	-.03	.00	.00	.00	-.02	.00
Conclusion	.11	.41	.64		-.08	-.09	.07	.03	-.03	.02
Usage	.01	.50	.55	.43		.05	-.03	-.01	.02	.04
Clarity	.07	.55	.61	.41	.75		-.01	-.02	-.04	.01
Voice Control	.13	.54	.50	.42	.50	.56		.02	-.02	.00
Voice Interest	.06	.47	.38	.28	.45	.48	.71		-.01	.02
Pronunciation	.04	.36	.39	.33	.58	.50	.43	.41		-.02
Efficiency	.52	.62	.77	.57	.51	.53	.50	.42	.31	

*Residual correlations are listed above the diagonal.

TABLE X-8. FACTOR MATRICES FOR 10 SPEECH CATEGORY SCORES

Category	Unrotated Orthogonal Factor Matrix			Rotated Oblique Factor Matrix			h^2
	I	II	III	A	B	C	
Length	.29	.61	.18	-.05	.66	.05	.48
Introduction	.76	.18	.11	.27	.43	.25	.62
Organization	.83	.28	-.16	.53	.56	-.01	.79
Conclusion	.63	.12	-.26	.53	.35	-.10	.48
Word Usage	.76	-.31	-.26	.62	-.01	.07	.73
Clarity	.78	-.24	-.16	.54	.06	.15	.69
Voice Control	.74	-.20	.34	.08	.06	.58	.70
Voice Interest	.65	-.30	.45	-.05	-.07	.68	.71
Pronunciation	.58	-.31	-.10	.39	-.08	.17	.44
Efficiency	.79	.40	.00	.36	.66	.09	.79

shows the unrotated orthogonal factor matrix and the rotated oblique factor matrix. Residual correlations are listed above the diagonal in Table X-7.

Rotations from the orthogonal factor matrix to the oblique factor matrix were accomplished by preparing plots of pairs of factor loadings and were guided by criteria of simple structure. The final transformation matrix and the intercorrelations among the three oblique factors are given in Table X-9. These intercorrelations show that Factor B is relatively independent of the other factors, A and C, which show a substantial positive correlation of .62.

Loadings on Factor A above .25 include

Proper Word Usage	.62
Clarity and Impressiveness	.54
Effectiveness of Conclusion	.53
Organization of Body	.53
Pronunciation	.39
Interest and Efficiency	.36
Effectiveness of Introduction	.27

Examination of the weighted scoring components of the first four categories above suggests that this factor is related to clarity of organization and precision both in regard to the use of language in sentences and the over-all development of ideas. Principals high on this factor might well be regarded as effective speakers not because of their style of delivery, or the length of their speech, but because of the precision and clarity of what they say. Thus, Factor A may be referred to as Precision, Clarity and Organization.

The loadings on Factor B are

TABLE X-9. FINAL TRANSFORMATION MATRIX AND CORRELATIONS AMONG THE FACTORS FROM THE ANALYSIS OF 10 SPEECH CATEGORY SCORES

Transformation Matrix				Intercorrelations			
Factor	A	B	C	Factor	A	B	C
I	.49	.35	.27	A	1.00	.00	.62
II	-.06	.93	-.32	B	.00	1.00	.19
III	-.87	-.04	.91	C	.62	.19	1.00

Length of Speech	.66
Interest and Efficiency	.66
Organization of Body	.56
Effectiveness of Introduction	.43
Effectiveness of Conclusion	.35

Factor B is unrelated to the other two factors and is most clearly characterized by Length of Speech. Examination of the weighted component of the other categories which load on Factor B suggest that this factor is related to the effective use of the allocated time. The speaker organizes his speech to use his time to develop his topics effectively. Factor B may be referred to as Effective Use of Time.

Loadings on the third factor are

Voice Interest	.68
Voice Control	.58
Effectiveness of Introduction	.25

Factor C may be referred to as Voice Control and Delivery, since it is related most closely to control of voice, in such that the meaning intended, sincerity, and enthusiasm are conveyed in the speech.

Relationships of Group Interaction Category Scores and Speech Scores with Other Variables of the Study

Following the pattern of the preceding chapter, in this section the relationship between a large number of other variables in the study and two selected scores from the 10 group interaction scores and two from the 10 speech scores will be examined in detail. Attention will be focused upon the group interaction categories, Amount of Talking and Presents Facts Effectively, and upon the speech category scores, Word Usage and Length of Speech.[3/]

Table X-10 presents the correlations of 32 in-basket category scores with the four measures.

There are a number of significant relationships shown in Table X-10. (Correlations of ±.17 or larger are significant beyond the .01 level.) The relationships of both group interaction scores with in-basket categories have a somewhat similar pattern and for the most part involve categories that are concerned with communication (exchanging of information or discussing with others).

The most striking finding in Table X-10 is that relatively high correlations are found in the Word Usage column. The pattern of correlations is somewhat similar to that for the two interaction categories; but it is surprising to find correlations as high as .35 between a rating of a tape-recorded speech and scores based on responses to in-basket items. The explanation may be that Word Usage reflects the general educational and intellectual level of the speaker, since the highest correlations are with in-basket categories which are related to mental abilities.

Table X-11 presents the correlations of the four scores, Amount of Talking, Presents Facts Effectively, Word Usage, and Length of Speech with the ability and professional knowledge test scores.

Both of the group interaction scores show positive relationships with three of the tests of professional and general knowledge and with

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[3/] The two group interaction categories were selected on the basis of results reported in Chapter XIII because of their high loadings in this over-all analysis. Speech scores were not included in the 120 variable analysis of Chapter XIII because of the irregularity that would be introduced by the 15 cases for which no speech data were available. The two speech categories selected here have highest loadings on Factors A and B.

TABLE X-10. CORRELATIONS BETWEEN 32 IN-BASKET CATEGORIES AND (1) TWO GROUP INTERACTION CATEGORY SCORES AND (2) TWO SPEECH CATEGORY SCORES

In-Basket Category	Interaction		Speech	
	Amount of Talking	Presents Facts Effectively	Word Usage	Length of Speech
1 Asks Subordinates	.11	.20	.34	.09
2 Informs Subordinates	.13	.19	.29	.04
3 Discusses with Subordinates	.13	.17	.23	.22
4 Communicates Face-to-Face	.17	.19	.26	.19
5 Decides on Procedure	.11	.16	.29	.20
6 Concluding Decision	-.01	-.02	-.04	-.14
7 Follows Subordinates	.10	.09	.10	-.01
8 Terminal Action	-.06	-.04	-.13	-.15
9 Program Values	.11	.10	.12	.07
10 Conceptual Analysis	.17	.12	.18	.06
11 Superiors Involved	.16	.07	-.01	-.03
12 Discusses with Superiors	.10	.11	.19	.07
13 Outsiders Involved	.08	.05	.17	-.07
14 Relates to Other Materials	.17	.14	.30	.11
15 Immediate Work Scheduled	.12	.17	.17	.17
16 Intermediate Work Scheduled	.13	.13	.15	.15
17 Informs Outsiders	.11	.08	.18	-.04
18 Follows Outsiders	-.05	-.02	.16	-.06
19 Courtesy to Outsiders	.08	.01	.19	.01
20 Leading Action	.14	.22	.20	.18
21 Courtesy to Subordinates	.13	.20	.17	.19
22 Directs	.13	.17	.24	.13
23 Careless	-.04	.02	-.05	-.08
24 Delays	.08	.05	.07	.18
25 Informality to Subordinates	-.06	.06	.16	.10
26 Number of Words	.20	.20	.35	.04
27 Recognition for Good Work	.20	.18	.26	.11
28 Prejudges	-.04	-.09	-.12	-.08
29 Human Values	.06	.13	.17	.06
30 Controlled Delegation	-.10	-.01	-.04	-.05
31 Uncontrolled Delegation	.02	.10	.04	-.08
32 Sets Deadline	.03	.11	.12	-.06

TABLE X-11. CORRELATIONS OF GROUP INTERACTION CATEGORY SCORES AND SPEECH CATEGORY SCORES WITH ABILITY, KNOWLEDGE AND ACHIEVEMENT TEST SCORES

Ability Tests	Group Interaction		Speech	
	Amount of Talking	Presents Facts Effectively	Word Usage	Length of Speech
Basic Mental Abilities				
Deduction	.21	.07	.18	.16
Speed of Closure 1	.17	.11	.25	.07
Number Facility 2	.13	.07	.28	-.07
Verbal Knowledge	.12	.14	.40	.09
Induction	.19	.15	.25	.10
Associative Memory 1	.10	.14	.12	.17
Number Facility 1	.17	.07	.25	.02
Flexibility of Closure	.16	.09	.13	.08
General Reasoning	.15	.07	.21	.13
Visualization	.10	.09	.08	.06
Speed of Closure 2	.12	.14	-.03	.03
Word Fluency	.18	.13	.22	.11
Expressional Fluency	.19	.14	.14	.09
Ideational Fluency	.22	.15	.16	.11
Associational Fluency	.13	.15	.28	.08
Professional and General Knowledge				
Administration and Supervision	.29	.31	.45	.20
Elementary Education	.20	.20	.41	.07
Social Studies	.22	.20	.32	.12
Science and Mathematics	.16	.12	.16	.16
Background Achievement				
Total Background	.23	.22	.24	.20

the background achievement test score (r's range from .20 to .31). In addition, Amount of Talking is related to reasoning, both deductive (r = .21) and inductive (r = .19), and to fluency, especially ideational fluency, (r = .22).

Length of Speech has low, although usually positive, correlations with ability measures, the highest correlation being .20. Word Usage, on the other hand, has fairly high correlations with a number of ability measures, especially verbal knowledge (r = .40) and the tests of professional knowledge (r = .45 and .41); this result tends to corroborate the hypothesis that in rating speeches on Word Usage, the rater was responding to the general educational and intellectual level of the speaker. Also related to Word Usage are ability to reason (r = .18, .25, and .21), facility in the use of symbolic material /subtraction and multiplication (r = .28), and addition (r = .25)7 and fluency (r = .22, .14, .16, and .28).

Table X-12 presents the correlation of the group interaction scores and the speech scores with basic personality factors, background orientation, and interest scores.

In the group interaction situation, differences in Amount of Talking appear to reflect differences in personality of the principals. Those principals who impressed their associates in the group interaction situation with their amount of talking described themselves on the personality questionnaire as adventurous (r = .28), dominant (r = .24), and friendly (r = .20). Their interest appeared to be somewhat more like the interests of public administrators (r = .17), city school superintendents (r = .17) and lawyers (r = .17). Presents Facts Effectively was unrelated to any of the variables except the

TABLE X-12. CORRELATIONS OF GROUP INTERACTION CATEGORY SCORES AND SPEECH CATEGORY SCORES WITH BASIC PERSONALITY FACTORS, BACKGROUND ORIENTATION, AND INTEREST SCORES

Test Score	Group Interaction		Speech	
	Amount of Talking	Presents Facts Effectively	Word Usage	Length of Speech
Basic Personality Factors				
A Friendly	.20	.11	.04	.03
C Emotional Stability	.02	.07	-.04	.07
E Dominance	.24	.15	-.01	.12
F Enthusiastic	.10	.07	-.06	.15
G Character Strength	-.03	-.13	-.14	-.07
H Adventurous	.28	.14	-.05	.13
I Emotionally Sensitive	-.08	-.06	.18	-.02
L Suspicious	-.02	-.08	-.13	-.06
M Non-Conventional	-.08	-.10	.16	-.01
N Sophistication	.14	.09	-.09	.06
O Insecurity	-.11	-.12	.01	.04
Q_2 Self-Sufficiency	-.03	.03	.01	-.07
Q_3 Will Control	-.02	.05	-.04	-.06
Q_4 Nervous Tension	-.04	-.05	-.04	.02
Background Orientation Categories				
Pupil Education	.08	.03	.26	-.01
Community Concerns	.01	.07	-.08	.13
Strong Vocational Interest Blank				
Psychologist	.11	.08	.21	.17
Policeman	-.05	-.12	-.35	.00
Public Administration	.17	.09	.03	.20
City School Superintendent	.17	.06	.19	.13
Lawyer	.17	.20	.25	.15

lawyer key on the Strong Vocational Interest Blank; principals with interests like lawyers were rated as effective in presenting facts (r = .20).

Length of Speech made by principals is unrelated to the personality factors but shows small relationships to interest in the area of public administration (r = .20) and psychologist (r = .17). Arrangement and proper use of words is generally unrelated to the personality measures; it relates negatively with the interest score for policeman (r = -.35), and positively with interest scores for lawyer (r = .25), psychologist (r = .21) and city school superintendent (r = .19). There is also a small indication that proper use of words in speech are positively related to sensitivity to pupil educational needs (r = .26).

Table X-13 presents the correlations of the two group interaction scores and the two speech scores with the instructional awareness categories and job performance values.

With minor exceptions, the only important relationships in Table X-13 involve the speech category Word Usage. Most of the instructional awareness categories and three of the job performance values are significantly correlated with this speech score. Although this speech category was based on an oral performance and the instructional concerns were based on written work, the two undoubtedly have a common requirement of verbal facility, fluency, and other cognitive abilities. This explanation for these correlations is clearly supported by data previously presented and discussed (see Table IX-13, Chapter IX, and Table X-11 in this chapter).

TABLE X-13. CORRELATIONS OF GROUP INTERACTION CATEGORY SCORES AND SPEECH CATEGORY SCORES WITH INSTRUCTIONAL AWARENESS AND JOB PERFORMANCE VALUES

Category Scores	Group Interaction		Speech	
	Amount of Talking	Presents Facts Effectively	Word Usage	Length of Speech
Instructional Awareness Categories				
Objectives	.06	.09	.32	.01
Evaluation	.09	.07	.32	-.11
Planning	.07	.02	.30	.00
Curriculum	.06	.01	.26	-.03
Participation	.04	.00	.34	-.03
Interest	.13	.06	.30	-.02
Growth	.13	.09	.28	.01
Methods	.17	.08	.18	-.01
Materials	.13	.02	.15	.01
Personality	.11	.08	.21	.07
Classroom	.10	.06	.08	.04
Climate	.04	.10	.20	.00
Job Performance Values				
Instruction	.14	.09	.23	-.16
Pupils	.07	.01	.21	-.14
Employees	.12	.17	.15	.10
Physical	.04	.02	.04	-.05
Structure	.10	.13	.17	-.01
Public	.04	.01	.12	-.11

Table X-14 presents the correlations of the four scores with eight group interaction category scores and five biographical variables. The correlations in the upper left portion of the table are also shown in Table X-2 and were discussed previously.

The two speech variables are for the most part unrelated to the group interaction scores; but Length of Speech correlates with Frequency of Interaction ($r = .20$) and Suggests New Procedures ($r = .21$).

The biographical variables are unrelated to either of the group interaction scores, but some interesting relationships with speech scores are found. There is a definite tendency for women to be rated higher on Word Usage ($r = .35$), but men tend to give longer speeches ($r = .24$).

Total experience is positively associated with the Word Usage rating ($r = .18$), but amount of academic training does not correlate with Word Usage. Years of academic training does, however, relate to length of speech to a slight extent ($r = .20$).

Table X-15 presents the correlations of the two group interaction scores and the two speech scores with performance evaluations.

Evaluations of the principals' performance made by the in-basket test scorers and the staff members show definite positive correlation with each of the four scores. Since staff members observed the principals in the group interaction problem, it is understandable that their ratings should have high correlations with the group interaction variables. The in-basket test scorers, however, had no direct association with the principals or with any materials related to the group interaction problem or the speech. The positive association between their impression of the principals and the principals' scores

TABLE X-14. CORRELATIONS OF TWO SELECTED GROUP INTERACTION CATEGORY SCORES AND TWO SPEECH CATEGORY SCORES WITH OTHER SCORES FROM THE GROUP INTERACTION PROBLEM AND BIOGRAPHICAL VARIABLES

Score or Variable	Group Interaction		Speech	
	Amount of Talking	Presents Facts Effectively	Word Usage	Length of Speech
Group Interaction Score				
Frequency of Interaction	.50	.31	-.01	.20
Gives Positive Information	.34	.21	.10	.01
Asks for Information	.08	.18	.11	.03
Suggests New Procedures	.31	.33	.08	.21
Presents Facts Effectively	.53	1.00	.14	.13
Makes Decisions Effectively	.42	.66	.14	.10
Amount of Talking	1.00	.53	.11	.10
Attempts to Influence	.66	.44	.03	.14
Biographical Variables				
Total Experience	-.09	-.06	.18	-.04
Administrative Experience	.03	.05	.13	.04
Academic Preparation	.09	.09	.00	.20
Age	-.12	-.08	.17	-.04
Sex (Men 1, Women 2)	-.14	-.05	.35	-.24

TABLE X-15. CORRELATIONS OF GROUP INTERACTION CATEGORY SCORES AND SPEECH CATEGORY SCORES WITH PERFORMANCE EVALUATIONS

Performance Evaluation	Group Interaction		Speech	
	Amount of Talking	Presents Facts Effectively	Word Usage	Length of Speech
Ratings by Superiors				
Interest in Work*	.13	.22	.10	-.06
Sticking to a Job	.16	.26	.11	-.06
Getting Along with Teachers*	.09	.16	.01	.00
Getting Along with Parents*	.07	.16	-.03	-.02
Getting Along with Supervisors*	.05	.14	.04	-.11
Knowledge of Administration	.16	.29	.20	.00
Knowledge of Teaching*	.14	.22	.27	-.01
Rapport with Children	.05	.01	-.06	.05
Written Communication	.09	.15	.21	-.05
Understanding	.14	.28	.17	.01
Oral Communication (Informal)	.17	.28	.22	.10
Over-All Impression*	.15	.26	.16	.01
Teachers' Impressions				
Consideration	.16	.14	-.05	-.04
Initiating Structure	.10	.14	.17	.05
Teachers' Reaction	.16	.19	.11	.00
Staff Members' Ratings				
Staff Rating	.35	.41	.21	.18
In-Basket Scorers' Ratings				
Scorer's Rating	.25	.24	.40	.17

* Reflected in order that a positive correlation corresponds with a positive rating.

on these four categories may best be accounted for in terms of an element of verbal ability, skill, or facility which was common to in-basket work and the group interaction and speech tasks. The highest correlation of scorers' impressions is with Word Usage (r = .40).

Teachers' impressions show small and usually positive associations with the four variables. The generally small relationship exhibited is of interest because the group interaction situation provides tasks more like the ones in which teachers and principals are normally involved together than other tasks of the test week.

The significant correlation with the superiors' evaluations all involve the categories Presents Facts Effectively and Word Usage. These two categories are positively related to the superiors' ratings on the items Knowledge of Administration (r = .29 and .20), Knowledge of Teaching (r = .22 and .27), Understanding (r = .28 and .17), and Oral Communication (r = .28 and .22). These relationships point to the importance superiors attach to communication skill in forming the impression of the principals.

Summary and Transition

In this and the preceding chapter the performance of the principals on administrative tasks that were presented by procedures other than in-basket tests has been presented, analyzed, and discussed. These included simulated (1) observation and evaluation of the work of probationary teachers, (2) participation in conferences about special educational problems, (3) preparation and delivery of a speech to the P.T.A. and (4) interaction with other principals in a committee discussion. Common factors in each of the four areas of performance were determined, and the relationships between selected variables from each area and other data about the principals' characteristics and performance were systematically investigated.

In the chapter to follow attention will shift from description of performance of tasks in Whitman School to evaluations of the principals' performance, both in Whitman School and in their home schools.

CHAPTER XI

SUBJECTIVE EVALUATIONS OF PERFORMANCE

The most usual evaluation of the performance of an administrator is an over-all subjective judgment. The progress of an elementary school principal--his promotion, dismissal, transfer, and salary--depends primarily upon the opinions of his superiors--his supervisor, assistant superintendent, and superintendent.

Subjective evaluations of the performance in their home schools of the 232 elementary school principals in the study were made by their superiors for this project. Judgments were also made by the teachers who served under each principal. These evaluations were usually made prior to the test week. In addition, subjective evaluations were made by in-basket test scorers and by members of the research staff. Since much information about the 232 principals is at hand, an opportunity is provided to investigate the question of what characteristics of a principal's performance are viewed favorably by his superiors, by his teachers, by the in-basket test scorers, and by members of the research staff.

Notice that the question is stated in terms which stress achievement of greater understanding of the subjective evaluations that are made about the principals' performance. None of the evaluations is assumed to be a criterion and the correlations with these evaluations are not regarded as validity coefficients. On the contrary, the object is to learn more about the nature of the judging process and about the attitudes and values of those who make the judgments. The correlations of subjective judgments with other scores will be of interest because of the information they give about the characteristics of principals who are perceived as good by members of a class of judges.

Description of Evaluative Measures

In-Basket Scorers' Ratings

These measures have been discussed in Chapter VI. After each in-basket scorer had completed the scoring of her particular half of an in-basket test, she was asked to make three judgments about the performance of the principal. The one of greatest interest required her to circle a number on a seven-point rating scale to indicate her answer to the following question: On the basis of what you know about the subject, how well do you think he would perform as the principal of Whitman School (or as the executive officer of the Northeastern Division of the Bureau of Business)? The high end of the scale (7) was defined as well and the low end (1) as poorly.

Eight judgments were made about each principal, one by the scorer of the odd-numbered items for each of the four in-baskets, and one by the scorer of the even-numbered items for each of the four in-baskets. A total score, the sum of the eight ratings, was obtained for each principal. The mean total score for all 232 principals was 30.2, with a standard deviation of 5.0. Dividing the mean by 8 gives 3.8, the average rating assigned the principals by the scorers, which is a little below the middle of the seven-point rating scale.

The reliability of the scorers' rating was computed by correlating the sum of the ratings made by the scorers of the odd-numbered items with the sum of those made by scorers of the even-numbered items and then applying the Spearman-Brown formula to estimate the reliability for all eight ratings. The reliability was found to be .72. This reliability reflects the amount of consistency of performance of the principals as well as the amount of agreement between raters, since no two raters saw the same in-basket responses.

After scoring her in-basket responses the scorer also completed an adjective check list to describe each subject. Her task was to check the one of each pair of adjectives which best described the subject's behavior. There were 21 pairs of adjectives, such as Friendly--Aloof; Slipshod--Painstaking; and Courteous--Rude. The subject's score for each adjective-pair was the number of times the adjective in the left-hand position was checked by the eight scorers.

A reliability estimate for each adjective-pair was determined by correlating the score obtained from the four scorers of odd-numbered items with that obtained from the four scorers of even-numbered items and then applying the Spearman-Brown formula. Ten of the 21 adjective-pairs were chosen, on the basis of their reliabilities, for use in the subsequent analysis. The reliabilities of these adjective-pairs are shown in Table XI-1, along with their means and standard deviations. The pairs not shown in the table had reliabilities below .42. The intercorrelations of the 10 pairs used in the analysis are shown in Table XI-2, along with their correlations with the in-basket scorers' over-all rating of the principal. Most of the adjective-pairs have high correlations with the over-all rating as can be seen in Table XI-2. It would appear that checking Urbane, Forceful, Painstaking, and Resourceful are almost equivalent to rating the person as a good principal of Whitman School. The intercorrelations of these four adjective-pairs are very high as compared with their reliabilities. The adjectives Cold-hearted, Tactful and Courteous apparently

TABLE XI-1. MEANS, STANDARD DEVIATIONS, AND RELIABILITIES OF ADJECTIVE-PAIRS

Adjective-Pair	Mean	S.D.	Reliability
Urbane--Rough	4.53	1.85	.68
Forceful--Tentative	4.94	1.78	.51
Slipshod--Painstaking	2.63	1.59	.45
Cold-hearted--Genial	1.00	1.03	.44
Resourceful--Notionless	3.54	1.75	.53
Logical--Intuitive	6.13	1.35	.47
Tactful--Tactless	6.45	1.29	.45
Wordy--Terse	3.79	1.90	.58
Courteous--Rude	7.00	1.14	.47
Witty-Humorless	1.37	1.34	.56

TABLE XI-2. INTERCORRELATIONS OF 10 ADJECTIVE-PAIRS AND CORRELATIONS WITH OVER-ALL RATINGS

Adjective-Pair	1	2	3	4	5	6	7	8	9	10
1. Urbane--Rough		.66	-.64	-.27	.66	.55	.45	.29	.23	.29
2. Forceful--Tentative	.66		-.52	-.16	.64	.40	.31	.26	.14	.33
3. Slipshod--Painstaking	-.64	-.52		.35	-.54	-.53	-.53	-.33	-.31	-.25
4. Cold-hearted--Genial	-.27	-.16	.35		-.29	-.23	-.54	-.27	-.55	-.18
5. Resourceful--Notionless	.66	.64	-.54	-.29		.47	.40	.41	.18	.44
6. Logical--Intuitive	.55	.40	-.53	-.23	.47		.46	.22	.29	.16
7. Tactful--Tactless	.45	.31	-.53	-.54	.40	.46		.33	.53	.24
8. Wordy--Terse	.29	.26	-.33	-.27	.41	.22	.33		.28	.27
9. Courteous--Rude	.23	.14	-.31	-.55	.18	.29	.53	.28		.09
10. Witty--Humorless	.29	.33	-.25	-.18	.44	.16	.24	.27	.09	
In-Basket Scorers' Over-All Ratings	.79	.71	-.70	-.33	.72	.59	.54	.40	.35	.43

represent a personal characteristic which tends less to be equated with good performance as a principal.

Staff Ratings

At least two research staff members were present at each of the test centers. During the week it was their responsibility to supervise all activities of the center: administer the tests, introduce the speakers at the P.T.A., serve as experimenter or observer for the interaction problem, and so on. The staff members had meals with the subjects and associated with them informally during the evening hours. They thus came to know the principals mostly through informal observations; only in the interaction problem did they have a formal opportunity to observe the work of the principals.

At the end of the week, all staff members evaluated the principals. The Staff Evaluation Form involved a nominating technique. The evaluation was made in response to the following question: "If you were requested to select a principal for Whitman School on the basis of what you now know about each one, whom would you choose?" The five best and the five poorest were nominated, in order of preference, independently by each staff member. Nominations were also made for popularity and likeableness; but only the over-all impression was used in the analysis.

The average nomination value used in the analysis was obtained by using the following set of numerical values to correspond to the nominations:

First choice	5
Second choice	4
Third choice	3
Fourth choice	2
Fifth choice	1
No nomination	0
Fifth from last choice	-1
Fourth from last choice	-2
Third from last choice	-3
Next to last choice	-4
Last choice	-5

The number of staff members making nominations was most often two, but at some administrations where more staff members and observers were present more nominations were obtained, the largest at one center being six.

After the average nomination value for each principal was obtained, the averages were converted to a 10-point scale using the following conversion:

4.00 and above	9
3.00 to 3.99	8
2.00 to 2.99	7
1.00 to 1.99	6
0 to 0.99	5
-1.00 to -0.01	4
-2.00 to -1.0	3
-3.00 to -2.01	2
-4.00 to -3.01	1
-5.00 to -4.01	0

A principal who received no nominations from anyone would thus be assigned a score of 5. The mean value for the staff rating was 4.7 with a standard deviation of 1.8.

In order to obtain an estimate of the reliability of the staff rating, the nominations made by the two regular staff members were used: the administrator (the person in charge of the test center) and his principal assistant. The administrator was the same person at most centers, but the principal assistant assignment was filled by a number of different persons. The judgments made by these two raters were correlated and corrected for double length to give an estimate of the reliability for a composite based on two judges. This reliability estimate was found to be .60. Since the composite used in the study was based on at least two and often more than two judges, its reliability is likely to be a bit higher than .60. On the other hand, the judges other than the administrator and his assistant tended to be less experienced; thus the .60 may be a reasonable estimate of the reliability of the staff rating.

Teachers' Judgments

Each teacher in the schools served by the 232 principals filled out two forms describing the behavior of his principal. In all, more than 7,000 teachers filled out these forms. One form was called the Teacher Reaction Form and the other the Principal Behavior Description Questionnaire.

Teacher Reaction Form--This form was developed by Griffiths;[1] it contains 20 statements about the behavior of a principal, each of which is answered by checking always, often, occasionally, seldom or never. Since all the statements are favorable, the always response is given the most credit. The numerical values used in scoring are 4, 3, 2, 1, and 0, respectively, for the adverbs always to never. The total score is the sum of the values corresponding to the answers checked.

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[1] Griffiths, Daniel E. An Evaluation of the Leadership of the School Superintendent. Doctor's Thesis. New Haven: Yale University, 1952. (Unpublished. A digest was published by the CPEA-MAR Center of Teachers College, Columbia University, 1952.)

The fact that all the items are stated in a favorable direction presumably makes the form susceptible to a response bias of acquiescence; but since the score attributed to a principal is the mean of the scores obtained from his teachers, the probable effect of such bias would be to move the mean toward the always end of the scale.

The statements cover a wide range of behaviors, as is shown by this sample of the items:

1. He is very courteous and friendly.
2. He sets reasonable standards.
3. He respects others' opinions.
4. He displays initiative.
5. He is solicitous concerning his new teachers.
6. He is a very hard worker.
7. He is an effective public speaker.

At least two-thirds of the 20 items can be interpreted reflecting consideration for teachers; items 1, 2, 3, and 5 above are examples.

The mean score on the Teacher Reaction Form was 64.2, which means that most items were rated often. The standard deviation was 7.1. The reliability of the score on the Teacher Reaction Form was computed by dividing the teachers under each principal into two random groups, a and b. The correlation between means of the a group with means of the b group, corrected for double length, was used as the reliability estimate. This coefficient was .82.

Principal Behavior Description Questionnaire--This instrument is essentially the same as the Leader Behavior Description Questionnaire, which is a product of the Ohio State Leadership Studies.2/ The word Leader in the title was changed to Principal and the word staff in the items was changed to faculty or faculty members; otherwise the two

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2/ Halpin, Andrew W. The Leadership Behavior of School Superintendents. Columbus: College of Education, The Ohio State University, 1956.

instruments are identical. The instructions used were those which required respondents to describe the principal's behavior on the job.

The items are statements describing the principal's behavior; each is to be answered always, often, occasionally, seldom, or never. The Principal Behavior Description Questionnaire contains 40 items, 10 of which were not scored. Fifteen items contribute to a measure of Initiating Structure and 15 to a measure of Consideration. Initiating Structure has to do with behavior on the part of the principal which makes clear the organization, responsibilities, and behavioral consistencies of members of the group. Some of the items are as follows:

> He makes his attitudes clear to the faculty.
> He criticizes poor work.
> He emphasizes the meeting of deadlines.
> He lets faculty members know what is expected of them.

All but one of the 15 items are keyed in the always direction.

Consideration, as the term implies, reflects behavior of the principal that shows concern for the happiness and welfare of his faculty. Sample items are

> He does personal favors for faculty members.
> He is easy to understand.
> He refuses to explain his actions (scored negatively).
> He is friendly and approachable.

Four of the 15 Consideration items are scored negatively.

In scoring the Questionnaire, the choices are given values of 4 to 0, just as in the Teacher Reaction Form (or 0 to 4 in the case of the negatively stated items). The mean score for the Initiating Structure score was 42.4 with a standard deviation of 4.6. For Consideration the mean and sigma were 45.6 and 5.4, respectively. The adverb often was typically chosen to describe considerate behavior, while for Initiating Structure the mean was at a point a little below often.

The Principal Behavior Description Questionnaire score for a given principal is the mean of the scores obtained from the forms filled in by all his teachers. To estimate the reliability of the Initiating Structure and Consideration scores, the teachers under each principal were divided into two random subgroups and mean scores obtained from each subgroup. The reliability coefficient is the correlation between the scores obtained from these subgroups corrected for double length. The reliability was .83 for both the Consideration and Initiating Structure scores.

Superiors' Ratings

A form called Performance Ratings for School Principals was prepared for use by the superiors of the 232 principals in the study. It asked for evaluation of the principal on 12 characteristics and, in addition, for a judgment of Over-All General Impression. The form of the instrument is illustrated by one of the items:

Ability to get along with parents.

- ☐ Frequently disagreeable; often shows lack of tact; fails to get along
- ☐ Shows lack of skill in human relations; should get along better
- ☐ Usually gets along with no more than minor conflicts
- ☐ Gets along well; is well liked

☐ Very well liked; his friendship and advice are sought

☐ I cannot make a fair evaluation.

The 12 rating items are as follows:

Interest in Work
Capacity to Stick to a Job in Spite of Difficulty
Ability to Get Along with Teachers
Ability to Get Along with Parents
Ability to Get Along with Supervisors
Knowledge of Administrative Practices and Procedures
Knowledge of Teaching Methods and Techniques
Rapport with School Children
Written Communication Skill
Understanding Written Communication
Oral Communication Skill (Formal)
Oral Communication Skill (Informal)

The thirteenth and final item in the rating form is as follows:

Over-All General Impression

☐ A poor performer, the kind you wish you didn't have

☐ Not so good as most; wouldn't want many like this

☐ Satisfactory but room for improvement

☐ A good performer, but there are better

☐ One of the very best; you wish there were more like this

☐ I cannot make a fair evaluation.

In some of the items, the "favorable" end of the scale was placed first, and in others, like the two illustrated, the "favorable" end was last.

On the cover page of the rating form the evaluator was asked the following question: "How confident are you about your ability to judge and evaluate his work?" This was to be answered by checking very confident, confident, or not confident.

The form was filled out by superiors of each principal. In small school districts the raters were most often superintendents and assistant superintendents. In large school systems the raters were less likely to include superintendents, and ratings were made more often by supervisors and assistant superintendents. It was clearly stated on the form that the ratings were for research purposes only and would not be revealed to the principals concerned. The mean number of raters per principal was 2.74.

The obvious method of scoring the form is to assign numerical values to the ratings by each superior and to obtain for each item the mean of these values. However, it might be desirable to weight the ratings on the basis of the amount of confidence expressed by the rater in his ability to make the judgment. Before deciding upon the scoring method, a comparison was made of the reliabilities of judgments made by all judges as compared with only the "very confident" judges.

The number of judges varied from principal to principal, and still more variation in number of ratings resulted from occasional use of the sixth box, "I cannot make a fair evaluation." This latter rating made it necessary to omit that item from any further consideration. A straightforward correlational method for estimating reliability was therefore impossible to apply. The method chosen was to use the intra-class correlation. Using values of 1 to 5 for the five positions on the rating item, intra-class correlations were computed for each rating factor. The intra-class correlation is equivalent to the average of the correlations between all possible pairs of raters. Since in fact there was more than one pair of raters, it is appropriate to estimate what the reliability would be for the larger number of raters by means of the Spearman-Brown prophesy formula. Using 3 as an approximation of the mean number of raters, the corrected reliabilities as estimated by this method are shown in Table XI-3, along with the means and standard deviations. (The scoring values were assigned in such a way as to give the favorable end of each rating scale the numerical value of 5.) The reliability of ratings is slightly elevated by the approximation just referred to. The reliabilities would also be spuriously increased by any discussions among the raters of a particular principal as to his merits. The instructions were to avoid such discussion prior to the ratings, but a certain amount of discussion may have taken place in the normal work of the supervisors. At any rate, the estimates indicate that the judgments are reasonably reliable in the sense that judges tend to agree with one another. It is interesting to note that the lowest reliability is for the item Rapport with Children.

The reliability of the over-all evaluation supplied by those judges who stated that they were very confident of their ability to judge the principal's work, was computed in the manner just described. For these confident judges, the intra-class correlation turned out to be .85, as compared with .74 for all judges. This higher reliability for the confident judges led to the decision to adopt a revised scoring system which weighted more heavily the judgments of superiors who expressed confidence in their judgments.

TABLE XI-3. MEANS, STANDARD DEVIATIONS, AND INTRA-CLASS CORRELATIONS OF SUPERIORS' RATINGS

Rating Item	Mean	Mean[a]	S.D.	Intra-Class Correlation	Estimated Reliability for Three Raters
Interest in Work	4.23	4.25	.67	.52	.77
Sticking to a Job	4.04	4.05	.67	.53	.77
Getting Along with Teachers	3.82	3.83	.76	.56	.79
Getting Along with Parents	3.82	3.83	.72	.45	.71
Getting Along with Supervisors	3.88	3.88	.74	.60	.82
Knowledge of Administration	3.62	3.62	.74	.58	.81
Knowledge of Teaching	3.36	3.39	.96	.63	.84
Rapport with Children	4.23	4.23	.61	.34	.61
Written Communication	3.56	3.58	.63	.50	.75
Understanding	3.65	3.67	.75	.53	.77
Oral Communication (Formal)	3.54	3.50	.66	.53	.77
Oral Communication (Informal)	3.58	3.60	.62	.53	.77
Over-All Impression	3.86	3.86	.83	.74	.89

[a] Based on ratings weighted by confidence levels.

The modified scoring system involved multiplying each rating by a number corresponding to the confidence level of the judge, and dividing the sum of the weighted ratings by the sum of the weights. The weights used were 1 for Not Confident, 2 for Confident, and 3 for Very Confident. Thus if a principal were rated 3, 2, and 2 by three superiors, with confidence levels of 1, 2, and 2, respectively, his score would be 2.2. Without the weighting the score would be slightly higher, 2.33, because of the greater influence of the low-confidence rating of 3. As can be seen in Table XI-3, the weighting had slight influence on the means. No reliabilities based on the weighted scores were computed, but one can be confident that these reliabilities would be at least as high as those shown in Table XI-3.

The intercorrelations of the ratings are shown in Table XI-4. One would expect the correlations to be high because of the familiar "halo" effect. Many of the correlations are in the .70's, but there are enough correlations in the .20's and .30's to suggest that the raters have succeeded in differentiating various aspects of excellence in the work of the principals. Because of the importance of superiors' ratings in real-life administrative situations and because of their importance in clarifying the behaviors observed in Whitman School, it was decided to factor the matrix of intercorrelations of superiors' ratings.

The analysis was performed by computing the characteristic roots and vectors, using the highest correlation in each column as the estimate of the communality. Table XI-5 shows the roots which exceed the largest negative root. It was decided to retain five factors. The residual correlations are shown above the diagonal in Table XI-4,

TABLE XI-4. INTERCORRELATIONS OF SUPERIORS' RATINGS[a]

Rating Item	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Interest in Work		.03	-.02	.00	-.00	-.02	.01	.02	.00	.02	.00	-.01	-.01
2. Sticking to a Job	.75		-.00	.00	-.01	-.01	-.03	.00	.02	.02	-.01	-.01	.01
3. Getting Along with Teachers	.41	.44		.01	-.02	.02	.01	.00	-.01	.00	-.01	.00	.02
4. Getting Along with Parents	.49	.53	.74		.04	-.00	.01	-.01	.00	-.03	.02	.01	-.02
5. Getting Along with Supervisors	.53	.54	.63	.73		-.02	.02	-.03	-.03	-.00	.01	.00	.04
6. Knowledge of Administration	.62	.64	.35	.41	.48		.01	-.00	-.01	-.03	.00	-.01	.03
7. Knowledge of Teaching	.65	.47	.29	.32	.46	.59		-.04	-.03	-.03	.01	.01	.04
8. Rapport with Children	.43	.34	.57	.54	.45	.22	.25		.05	.02	-.01	-.02	-.00
9. Written Communication	.47	.46	.25	.31	.39	.58	.55	.21		.03	.00	-.04	-.03
10. Understanding	.60	.60	.41	.43	.54	.63	.58	.29	.70		-.02	.01	.01
11. Oral Communication (Formal)	.53	.49	.28	.34	.30	.57	.52	.21	.58	.58		.01	-.00
12. Oral Communication (Informal)	.51	.49	.41	.44	.40	.55	.52	.28	.55	.65	.74		-.03
13. Over-All Impression	.72	.70	.59	.60	.72	.72	.71	.45	.58	.73	.58	.66	

[a] Residual correlations are shown above the diagonal.

TABLE XI-5. CHARACTERISTIC ROOTS EXCEEDING THE VALUE OF THE LARGEST NEGATIVE ROOT

Order	Roots	Decrease
I	6.92	
II	1.36	5.56
III	.50	.86
IV	.32	.18
V	.26	.06
VI	.18	.08
.		
.		
.		
XIII	-.14	(largest negative root)
Total	9.34	

and Table XI-6 presents the unrotated orthogonal factor matrix.

Graphic rotational methods were employed to produce an oblique factor matrix showing simple structure. The final transformation matrix is shown in Table XI-7 and the oblique factor matrix which it produced is shown in Table XI-8. In the following discussion of the factors, all factor loadings of .25 or higher will be considered.

Factor A has loadings of .25 or higher on the following items:

Ability to Get Along with Teachers	.69
Ability to Get Along with Parents	.62
Rapport with School Children	.56
Ability to Get Along with Supervisors	.52
Over-All General Impression	.25

This factor obviously reflects superiors' opinions about ability to get along with others, and we have named the factor Judgment of Ability to Work with Others. The superiors' over-all impression of the principal has a small positive loading on this factor.

Factor B has loadings of .25 or higher on only two items:

Knowledge of Teaching Methods and Techniques	.33
Rapport with School Children	.32

We have named this factor Judgment of Skill with Children.

Factor C has loadings of .25 or more on three items:

Capacity to Stick to a Job in Spite of Difficulty	.52
Interest in Work	.41
Knowledge of Administrative Practices and Procedures	.30

Because of the nature of the first two of the above items, which have the highest loadings, this factor is named Judgment of Motivation for Administrative Work.

Factor D is very well-defined, with two high loadings and no others higher than -.17.

Oral Communication Skill (Formal)	.49
Oral Communication Skill (Informal)	.48

The factor is called *Judgment of Speaking Ability*.

Factor E has loadings of .25 or greater on six items.

Written Communication Skill	.45
Understanding Written Communication	.39
Ability to Get Along with Supervisors	.31
Knowledge of Teaching Methods and Techniques	.31
Knowledge of Administrative Practices and Procedures	.26
Over-All General Impression	.26

This factor is named *Judgment of General Professional Skill*. Since the highest loading of the over-all rating is on this factor and since there is a high loading on Ability to Get Along with Supervisors, it appears that the general evaluation of a principal by his superior is particularly likely to reflect skills in reading and writing (as well as *Judgment of Ability to Work with Others*, Factor A).

The intercorrelations of the factors are shown in Table XI-9. In view of the amount of halo typically found in ratings, one would expect the correlations to be high. Factors D and E, both of which have to do with communication skills, correlate .78. But Factor A, *Judgment of Ability to Work with Others* correlates only .27 and .28 with the two communication factors, and, interestingly enough, it correlates only .03 with Factor B, *Judgment of Skill with Children*.

The superiors' ratings, then, can be thought of in terms of five instead of a dozen dimensions. When the superiors' ratings are considered characteristics of the principals themselves, it will be more convenient to make use of the more parsimonious way of viewing the superiors' evaluations.

TABLE XI-6. ORTHOGONAL FACTOR MATRIX

Rating Item	Factor					
	I	II	III	IV	V	h^2
Interest in Work	.80	.04	.29	.22	-.10	.78
Sticking to a Job	.77	-.01	.26	.20	.24	.76
Getting Along with Teachers	.64	-.55	-.18	-.01	.01	.73
Getting Along with Parents	.69	-.51	-.10	-.01	.11	.76
Getting Along with Supervisors	.73	-.37	.09	-.23	.05	.73
Knowledge of Administration	.76	.23	.15	-.02	.14	.68
Knowledge of Teaching	.71	.25	.18	-.09	-.31	.71
Rapport with Children	.50	-.45	-.07	.12	-.25	.53
Written Communication	.68	.34	-.10	-.24	.00	.65
Understanding	.80	.21	-.05	-.18	.06	.72
Oral Communication (Formal)	.69	.37	-.29	.21	.00	.74
Oral Communication (Informal)	.74	.22	-.37	.11	.01	.74
Over-All Impression	.90	-.02	.07	-.06	-.04	.82

TABLE XI-7. FINAL TRANSFORMATION MATRIX

	A	B	C	D	E
I	.26	.06	.16	.12	.23
II	-.85	-.09	.08	.17	.22
III	-.32	.03	.69	-.78	.12
IV	-.23	.02	.54	.58	-.94
V	-.22	-.99	.44	.08	.02

TABLE XI-8. OBLIQUE FACTOR MATRIX

Rating Item	Factor				
	A	B	C	D	E
Interest in Work	.06	.15	.41	-.01	.02
Sticking to a Job	.63	-.18	.52	.02	.02
Getting Along with Teachers	.69	.07	-.07	.12	.01
Getting Along with Parents	.62	-.02	.04	.08	.04
Getting Along with Supervisors	.52	.02	.05	-.17	.31
Knowledge of Administration	-.07	-.11	.30	.02	.26
Knowledge of Teaching	.01	.33	.08	-.09	.31
Rapport with Children	.56	.32	-.04	.09	-.12
Written Communication	-.03	.00	-.06	.07	.45
Understanding	.08	-.04	.05	.07	.39
Oral Communication (Formal)	-.08	.01	.05	.49	.01
Oral Communication (Informal)	.09	.01	-.05	.48	.07
Over-All Impression	.25	.09	.15	.01	.26

Interrelationships of Subjective Evaluations

In Table XI-10 are shown the intercorrelations of the major over-all subjective evaluaions, including the two scores from the Principal Behavior Description Questionnaire. There is a very high correlation between the Teacher Reaction Form and the Principal Behavior Description Questionnaire score, (.88); the Teacher Reaction Form also correlates .47 with the Principal Behavior Description Questionnaire score, Initiating Strudture. The Teacher Reaction Form and the Principal Behavior Description Questionnaire are inventories of quite similar item types and similar content, both filled out by the same teachers. There is apparently a good deal of overlap, especially with the Consideration score..

Except for the fact that teachers tend to agree with themselves there is rather little evidence of agreement to be found in the table. The highest correlation of the supreiors' over-all judgment is .26 with the Teacher Reaction Form. While the content of the items in the Teacher Reaction Form imposes enough limitation on the evaluation that it can hardly be called an over-all rating, nevertheless there is little doubt that it reflects the general impressions the teachers have formed about their principal. In spite of the fact that both teachers and superiors observed the same principal over a relatively long period of time in the same general setting, they show little agreement in their evaluations. There is still less agreement with the ratings made by in-basket scorers and by staff members.

The in-basket scorers tend to agree with staff members in their over-all rating of principals (r = .32). This is in spite of the fact that scorers and staff members observed completely different

TABLE XI-9. INTERCORRELATIONS OF FACTORS

	A	B	C	D	E
A	1.00	.03	.47	.27	.28
B	.03	1.00	.54	.46	.47
C	.47	.54	1.00	.66	.71
D	.27	.46	.66	1.00	.78
E	.28	.47	.71	.78	1.00

TABLE XI-10. INTERCORRELATIONS OF OVER-ALL SUBJECTIVE EVALUATIONS

Evaluation	1	2	3	4	5	6
1. Supervisors' General Impression		.16	.22	.26	.14	.18
2. In-Basket Scorers' Rating	.16		.32	.08	.03	-.03
3. Staff Members' Rating	.22	.32		.17	.09	.08
4. Teachers' Reaction	.26	.08	.17		.88	.47
5. Consideration	.14	.03	.09	.88		.16
6. Initiating Structure	.18	-.03	.08	.47	.47	

aspects of the principals' behavior. The staff members' knowledge of principals was based largely on informal acquaintance; the only work of the principals they observed was in the group interaction situation. The in-basket scorers, on the other hand, never saw the principals, but examined in considerable detail their in-basket responses.

All other relationships are low. Clearly, the subjective evaluations do not constitute a single criterion of the performance of the principals, although they may perhaps be thought of as several criteria that reflect different aspects of administrative behavior. It is preferable to think of the ratings as reflecting several points of view as to what is a good administrator. The task of the remainder of the chapter will be to answer the following question: What kind of principal was viewed as good (1) by the superiors, (2) by the teachers, (3) by the staff members, and (4) by the in-basket scorers?

Relationships with Specific Superior Rating Items

Table XI-11 presents the correlations of the six over-all evaluations with the more detailed items of the ratings made by superiors and in-basket scorers. The top part of the table is based on the 12 rating items in the superiors' rating form Performance Ratings for School Principals, and the lower part with the Scorers' Check List. Study of this table will be relevant to the question of what characteristics are valued by two kinds of evaluators.

The first 12 entries in the first column of Table XI-11 are the correlations of the superiors' general impression with the 12 items in the superiors' rating form. These correlations tend to be high, probably because of the familiar halo effect in ratings and are not

TABLE XI-11. CORRELATIONS OF OVER-ALL RATINGS WITH SUPERVISORS' RATINGS AND SCORERS' CHECK LIST

Evaluation	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Supervisors' Ratings						
Interest in Work	.72	.11	.14	.14	.04	.12
Sticking to a Job	.70	.11	.22	.18	.09	.16
Getting Along with Teachers	.59	.08	.04	.33	.36	.03
Getting Along with Parents	.60	.05	.14	.24	.26	.03
Getting Along with Supervisors	.72	.07	.08	.20	.19	-.01
Knowledge of Administration	.72	.19	.23	.09	-.05	.20
Knowledge of Teaching	.71	.28	.21	.13	-.02	.16
Rapport with Children	.45	.01	.01	.22	.26	-.04
Written Communication	.58	.24	.12	.06	-.06	.10
Understanding	.73	.28	.25	.17	.05	.10
Oral Communication (Formal)	.58	.27	.34	.19	.09	.18
Oral Communication (Informal)	.66	.31	.30	.23	.15	.14
Scorers' Check Lists						
Urbane--rough	.17	.79	.31	.02	-.05	-.04
Forceful--tentative	.12	.71	.24	-.02	-.06	-.05
Slipshod--painstaking	-.15	-.70	-.24	-.08	.02	-.06
Cold--genial	-.08	-.33	-.10	.10	.16	.04
Resourceful--notionless	.17	.72	.34	.03	-.03	-.01
Logical--intuitive	.17	.59	.23	.16	.06	.18
Tactful--tactless	.16	.54	.19	.07	-.03	.07
Wordy--terse	.03	.40	.19	.04	-.00	.01
Courteous--rude	.07	.35	.11	-.01	-.07	.02
Witty--humorless	.03	.43	.20	-.01	.03	-.14

comparable with those in other columns. Nevertheless it is of interest to consider the relative magnitude of the correlations in the first column as showing the importance attached to the characteristics by the superiors in making their over-all evaluations.

Six of the correlations are high and almost equally so: those with Interest in Work, Sticking to a Job, Getting Along with Supervisors, Knowledge of Administration, Knowledge of Teaching, and Understanding Written Communication. Inspection of the next column, showing correlations of the in-basket scorers' ratings with the superiors' ratings on these 12 items, shows quite a different pattern. The highest correlations are those involving knowledge of teaching and communication skills. In-basket scorers seem to prefer principals who are judged by superiors to communicate effectively and who know teaching. The latter pattern is somewhat similar for staff members, except that correlations for oral communication are a little higher.

The pattern of correlations of the Teacher Reaction Form score with the 12 superiors' rating items affords an interesting contrast with the correlations in the first column, because teachers seem to value characteristics that have relatively low importance in the superiors' over-all impression. Teachers prefer principals who are rated by superiors as getting along well with teachers and parents and having good rapport with children; all these characteristics have relatively low correlations with the superiors' over-all evaluation. The Consideration score of the Principal Behavior Description Questionnaire has a sizeable correlation with only one superiors' rating item, .36 with Getting Along with Teachers. This tends to provide some validity for the questionnaire as a measure of behaviors which produce good relationships between principal and teachers. The highest correlation in the last column is only .20; but if Initiating Structure is to correlate with any of the 12 rating items, that item probably should be Knowledge of Administration.

The lower part of the table shows the correlations with 10 adjective-pairs from the Scorers' Check List. The correlations in the second column, as in the previous situation involving the superiors' ratings, are probably inflated by halo effects; the in-basket scorers' ratings and the judgments on the adjectives were made by the same persons. Again, although the correlations in this column are not comparable with those in other columns, the relative magnitudes can be used as indicators of characteristics most valued by the in-basket scorers in making their evaluations. Four adjectives have correlations of .70 or higher with the in-basket scorers' evaluation. These include Urbane, Forceful, Painstaking, and Resourceful. The correlations are considerably lower for the adjectives Genial, Wordy, Courteous, and Witty.

Except for a few correlations with the staff evaluation, most of the remaining correlations with the adjective check list are nonsignificant. Principals who were liked by staff members tended to be considered Urbane and Resourceful by scorers. One might have entertained the hypothesis that principals who are described as considerate by teachers would be judged by the in-basket scorers as Genial, Tactful, or Courteous, but such is not the case. The signs of the correlations are not even in the expected direction in most instances.

TABLE XI-12. CORRELATIONS OF SCORERS' CHECK LIST WITH SUPERIORS' RATINGS

Rating Item	Urbane--rough	Forceful--tentative	Slipshod--painstaking	Cold--genial	Resourceful--notionless	Logical--intuitive	Tactful--tactless	Wordy--terse	Courteous--rude	Witty--humorless
Interest in Work	.13	.04	-.13	-.06	.12	.13	.15	.02	.06	-.02
Sticking to a Job	.11	.02	-.08	-.08	.12	.06	.14	.08	.09	-.01
Getting Along with Teachers	.04	.00	-.00	.10	.05	-.02	.01	-.05	-.07	.14
Getting Along with Parents	-.02	-.02	.01	.01	.03	-.03	.07	-.00	.00	.04
Getting Along with Supervisors	.04	-.00	-.07	-.06	.02	.08	.09	-.04	-.00	-.03
Knowledge of Administration	.21	.14	-.16	-.11	.20	.11	.16	.01	.05	.07
Knowledge of Teaching	.33	.21	-.29	-.22	.26	.24	.31	.10	.18	.06
Rapport with Children	-.04	-.01	-.01	.14	-.05	.02	-.02	-.02	-.11	.05
Written Communication	.25	.17	-.22	-.08	.15	.08	.14	.07	.05	.17
Understanding	.30	.23	-.27	-.14	.26	.21	.23	.03	.12	.15
Oral Communication (Formal)	.27	.18	-.23	-.10	.25	.22	.17	.15	.15	.17
Oral Communication (Informal)	.33	.24	-.22	-.12	.31	.23	.22	.16	.13	.16
Supervisors' General Impressions	.17	.12	-.15	-.08	.17	.17	.16	.03	.07	.03

To complete the presentation of the intercorrelations of the subjective evaluations, Table XI-12 shows the correlations of the Scorers' Check List with each of the items in the superiors' rating form. Many of the adjectives correlate with ratings of knowledge of teaching and the various communication skills; the results suggest that what the scorers were reporting by checking the adjectives Urbane, Forceful, Painstaking, Resourceful, Logical, and even Tactful was that the principal exhibited a high level of cognitive ability. No significant correlations were found between those superior rating items reflecting social relationships and choice of adjectives such as Genial, Tactful, Courteous, or Witty by the in-basket scorer. It is rather evident that the scorers' impressions of the "social" qualities of the principals whose in-basket responses they had scored do not correspond with either the superiors' or teachers' impressions of what would be comparable qualities. This lack of relationship cannot be explained entirely by the relatively lower reliability of the Scorers' Check List ratings for the adjective-pairs involved. It would appear that expressions of courtesy in in-basket work may be somewhat misleading. As has been suggested by the analysis of basic factors in in-basket work reported in Chapter VII, courtesy shown to subordinates, to outsiders, and perhaps to superiors is a part of directing the work of others. These expressions of courtesy were probably the chief basis of the in-basket scorers' impressions; but they are perhaps best understood as formalities rather than indicators of consideration in social relationships.

Relation of Over-all Evaluations to Measured Characteristics of Principals

It has been shown that the four classes of judges--superiors, scorers, staff, and teachers--may have quite different views as to what constitutes good work by an elementary school principal. The task now is to investigate in detail these different perceptions of good performance. The characteristics of principals who are perceived as good by superiors, by scorers, by staff members, and by teachers will be presented and discussed.

Correlations with Biographical Data

Such items of information as (1) number of years of training, (2) amount of experience in teaching and (3) experience in administrative work figure prominently in the data that are commonly used by superintendents or school boards in choosing elementary school principals. Table XI-13 shows the correlations of over-all evaluations with such items of biographical information.

The salient finding from Table XI-13 is that the correlations are predominantly very low. Age and experience apparently have very little relationship to successful performance of the duties of an elementary school principal as viewed by any of our judges. Years of training similarly tend to be uncorrelated with these evaluations.

While the correlations are for the most part not significantly different from zero, the predominance of negative correlations with age and experience is apparent. There seems to be a very slight tendency for all classes of judges to prefer the younger, less experienced principals. A small exception can be found for the Principal Behavior Description Questionnaire; the less experienced

TABLE XI-13. CORRELATIONS OF OVER-ALL EVALUATIONS WITH BIOGRAPHICAL DATA

Variable	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Age	-.08	-.03	-.17	-.13	-.23	.13
Total experience	-.01	-.01	-.14	-.13	-.26	.18
Administrative experience	-.08	-.00	-.05	-.14	-.21	.14
Academic preparation	.03	.02	.17	.04	.01	.02
Sex (men=1, women=2)	.19	.04	-.01	.08	-.09	.27

principals tend to be viewed by teachers as more considerate, while the older, more experienced principals appear to be slightly more likely to initiate structure in the interactions of principal and teachers.

There is a slight tendency for superiors to prefer the women principals ($r = .19$). The women are judged to initiate structure to a greater extent than the men principals ($r = .27$), who tend to be younger and less experienced.

Correlations with Cognitive Measures

Measures of various kinds of cognitive abilities include the tests of professional knowledge and "general culture," the basic mental ability tests, and the achievement test covering knowledge of the background materials studied during the test week. The correlations of evaluations with these measures is shown in Table XI-14.

The correlations in the first column show that the superiors' evaluations of principals' behavior has very little to do with cognitive abilities. Although the correlations are mostly positive, they are low. The highest correlation is that with the Administration and Supervision test ($r = .25$).

In sharp contrast are the in-basket scorers' evaluations, where a correlation of .60 is found. Scores on tests of professional and general knowledge, reasoning ability, verbal knowledge, and fluency are definitely related to the scorers' evaluation. The scorers' ratings were made immediately after a searching examination of written responses to the in-basket items and without any personal knowledge of the principals. Superiors, on the other hand, were perhaps more concerned with behavior observable only in face-to-face

TABLE XI-14. CORRELATIONS OF OVER-ALL EVALUATIONS WITH COGNITIVE MEASURES

Variable	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Basic Mental Abilities						
Deduction	-.02	.40	.22	.02	.05	-.10
Speed of Closure 1	.05	.29	.16	.00	.02	-.06
Number Facility 2	.16	.37	.10	.13	.08	.08
Verbal Knowledge	.08	.46	.21	-.02	-.10	-.05
Induction	.13	.45	.21	.01	.03	-.15
Associative Memory 1	.14	.21	.15	.09	.06	.07
Number Facility 1	.19	.39	.11	.10	.04	.06
Flexibility of Closure	-.01	.43	.25	-.02	-.00	-.17
Associative Memory 2	.10	.26	.05	.08	.04	.03
General Reasoning	-.04	.45	.17	.05	.10	-.19
Visualization	.01	.38	.16	.01	.03	-.19
Speed of Closure 2	.12	.28	.23	.06	.09	-.08
Word Fluency	.17	.42	.18	.11	.03	.09
Expressional Fluency	.13	.30	.24	.11	.08	-.04
Ideational Fluency	.04	.39	.08	.11	.07	.03
Associational Fluency	.17	.36	.19	.05	-.01	.00
Professional and General Knowledge						
Administration and Supervision	.25	.60	.36	.14	.06	-.01
Elementary Education	.19	.55	.26	.09	.04	-.07
Social Studies	.10	.54	.29	-.04	-.04	-.20
Science and Mathematics	-.03	.43	.22	-.03	.01	-.20
Background Achievement						
Total Background	.19	.55	.29	.12	.16	-.12

situations than they were with the ability of their principals to handle assignments involving analysis and writing (which are perhaps more revealing of cognitive aspects of performance). Staff members, whose five-day acquaintance with principals was restricted to face-to-face observation, and who can be assumed to be much less than well-acquainted with the principals than were the superiors, made evaluations that correlate higher with cognitive measures than the evaluations of the superiors. In interpreting these differences in correlation, one must keep in mind certain differences in rating conditions. The total number of staff members who acted as raters was about 15. One staff member was present at almost all sessions and rated more than 200 of the principals. Two other staff members rated more than 100 principals each; other raters were present only occasionally. On the other hand, the total number of superiors who acted as raters was greater than 50. Each rated only the principals from his school system who attended a particular test session. Thus the staff ratings tended more often to be made by the same judges, and these judges had a better acquaintance with the total range of ability than was true of the superiors.

Teachers' evaluations have almost no relationship with cognitive abilities. None of the correlations with the Teacher Reaction Form or with the Consideration scores are significant. There are a few significant negative correlations with the Initiating Structure score: principals with low scores on the general knowledge tests (social studies and science and mathematics) and on the general reasoning and visualization tests tended to initiate structure in interaction, as reported by their teachers.

Correlations with Interest Measures

The most salient finding in Table XI-15 is that interests, as measured by the Strong Vocational Interest Blank, have very little to do with how principals are evaluated. There is a very slight tendency for both scorers and staff members to prefer principals who resemble psychologists in the way they answer items in the Strong Vocational Interest Blank. The Consideration score is correlated negatively with the physician score but positively with the sales manager score. Initiating Structure seems to go with interests like those of a president of a manufacturing concern. All these relationships are small.

Correlations with Basic Personality Factors

Correlations between subjective evaluations and scores on the 16 Personality Factor Inventory are shown in Table XI-16. There are no correlations in the first four columns as high as .20. This analysis of these scores adds little to understanding the kind of principals preferred by various kinds of judges.

There are a few correlations of interest in the last two columns. Principals who, according to their teachers, are Considerate tend to be Friendly, Enthusiastic, Adventurous (rather than shy), and Self-confident (rather than insecure). Principals who are high on Initiating Structure tend to be characterized by Character Strength rather than by a lack of conventional standards. All these correlations, though low, are in the expected direction.

TABLE XI-15. CORRELATIONS OF OVER-ALL EVALUATIONS WITH STRONG VOCATIONAL INTEREST BLANK

Variable	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Psychologist	.10	.23	.20	-.04	-.12	-.12
Physician	-.09	-.04	.04	-.15	-.21	-.12
Engineer	-.06	-.00	.12	-.06	-.09	-.05
Production Manager	-.08	-.11	.04	.03	.09	-.04
Math.-Science Teacher	-.02	-.05	-.02	-.05	-.03	-.09
Policeman	-.13	-.17	-.08	-.04	.07	-.17
Personnel Manager	.08	.14	.11	.03	.08	-.11
Public Administrator	.06	.17	.13	.01	.05	-.16
Social Science Teacher	.08	.01	-.06	.04	.08	-.05
City School Superintendent	.14	.16	.10	.09	.08	-.03
Minister	.07	.03	-.06	-.04	-.10	-.04
Accountant	.00	-.05	-.06	.08	.08	.17
Purchasing Agent	-.02	-.06	-.03	.11	.18	.15
Sales Manager	.06	.06	.07	.14	.20	.08
Lawyer	.03	.19	.15	-.00	.00	-.05
President Manufacturing Concern	.07	-.05	.09	.12	.06	.26
Masculinity-Femininity	-.19	.03	.01	.01	.11	-.18
Occupational Level	.06	.15	.13	.03	-.01	.12

TABLE XI-16. CORRELATIONS OF OVER-ALL EVALUATIONS WITH BASIC PERSONALITY FACTORS

Variable	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
A. Friendly	.12	.02	.01	.17	.24	.04
C. Emotional Stability	.06	.10	.10	.03	.06	-.06
E. Dominance	-.06	.01	.16	.02	.03	-.02
F. Enthusiastic	.04	.04	.09	.11	.22	-.07
G. Character Strength	-.03	-.15	-.04	.07	.04	.25
H. Adventurous	.05	.01	.11	.18	.24	.05
I. Emotionally Sensitive	.02	.18	.00	-.02	-.04	-.07
L. Suspicious	-.18	-.08	-.01	-.01	.07	.02
M. Non-Conventional	.00	.00	-.00	-.02	-.13	.02
N. Sophistication	.02	.02	.05	-.06	.01	-.02
O. Insecurity	-.10	-.05	-.10	-.14	-.21	.04
Q_1. Radicalism	.05	.02	.07	.01	-.05	.08
Q_2. Self-Sufficiency	-.10	.12	-.10	.01	-.04	.05
Q_3. Will Control	.09	-.08	-.02	.06	.03	.15
Q_4. Nervous Tension	-.12	-.01	-.01	-.06	-.08	.03

Correlations with In-Basket Category Scores

Table XI-17 presents the correlations of subjective evaluations with 32 selected in-basket category scores. The in-basket scores used in computing these correlations were obtained from three school in-baskets; the Bureau of Business responses were not used in this analysis.

The correlations with the superiors' rating are quite low. Only four correlations -- those involving Discusses with Subordinates, Communicates Face-to-Face, Decides on Procedure and Asks Subordinates -- are significant at the .01 level (.17). Since these four scores all have relatively high loadings on both the in-basket second-order factors Preparation for Decision and Amount of Work, it is suggested that superiors have a slight preference for principals who are high on these factors and that superiors' ratings appear to be unrelated or related in complicated ways to other categories of in-basket behavior. This problem will be considered again in Chapter XIII.

The correlations with scorers' ratings tend to be much higher than those in any other column. While the scorers could not know the total in-basket score on any category at the time they made their ratings of the principals, they did carefully inspect all the responses for which they had the responsibility of scoring. In this sense, there is some contamination which might increase the correlations. Nevertheless, it is possible to interpret the correlations in terms of kinds of administrative behavior of which the scorers approved.

The highest correlation is with Number of Words (r = .61); scorers tended strongly to like principals whose verbal output was high. Correlations are also high with many of the categories which have high loadings on Factors A, Exchanging Information, B, Discussing before Acting, and N, Directing Others. Significant negative

TABLE XI-17. CORRELATIONS OF OVER-ALL EVALUATIONS WITH IN-BASKET CATEGORY SCORES

Category Scores	Superiors' General Rating	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Asks Subordinates	.18	.45	.29	.06	-.03	.00
Informs Subordinates	.10	.51	.17	.11	.07	.04
Discusses with Subordinates	.24	.44	.18	.10	.03	.06
Communicates Face-to-Face	.22	.55	.19	.07	.06	-.03
Decides on Procedure	.22	.50	.17	.11	.05	.05
Concluding Decision	-.05	.13	.00	.02	.16	-.16
Follows Subordinates	.10	.38	.18	.11	.14	-.04
Terminal Action	-.15	-.13	-.10	-.01	.11	-.08
Program Values	.05	.24	.07	.02	-.04	.03
Conceptual Analysis	.13	.31	.08	.03	-.04	.01
Superiors Involved	-.01	.20	.05	.11	.17	.02
Discusses with Superiors	.14	.40	.20	.12	.11	-.04
Outsiders Involved	.09	.39	.26	-.02	.00	-.11
Relates to Other Materials	.14	.42	.16	.11	.04	.11
Immediate Work Scheduled	.16	.32	.13	.09	.07	.06
Intermediate Work Scheduled	.12	.28	.07	-.00	-.06	.00
Informs Outsiders	.08	.28	.12	.11	.12	.03
Follows Outsiders	.05	.36	.03	-.06	.01	-.17
Courtesy to Outsiders	-.00	.27	.07	-.04	-.06	-.03
Leading Action	.09	.45	.11	-.01	-.02	-.03
Courtesy to Subordinates	.06	.42	.10	-.05	-.11	.07
Directs	.04	.51	.13	.02	-.01	.03
Careless	-.09	-.19	-.15	-.05	.02	.02
Delays	-.06	-.02	.12	.02	-.08	.13
Informality to Subordinates	.04	.29	.07	-.00	.03	-.12
Number of Words	.14	.61	.26	.14	.11	.05
Recognition for Good Work	.14	.35	.20	.05	.02	-.12
Prejudges	-.12	-.23	-.06	-.07	-.01	-.07
Human Values	.15	.29	.14	-.05	-.13	.00
Controlled Delegation	.07	-.06	.01	-.09	-.09	.03
Uncontrolled Delegation	.07	.04	.02	-.05	-.01	-.02
Sets Deadline	.12	.24	.16	.12	.06	.13

correlations are found for the categories Careless and Prejudges. The correlations with the categories having high loadings on Factor C, Complying with Suggestions, vary from -.13 for Terminal Action to .38 for Follows Subordinates. If the second-order factors are considered, it seems that scorers prefer principals who are high on Factor Y, Amount of Work, and near the "preparation" end of the bipolar Factor X, Preparation for Decision vs. Taking Final Action.

Only a few correlations in the Staff rating column are .20 or higher; these involve the categories Asks Subordinates, Outsiders Involved, Number of Words, Discusses with Superiors or Outsiders, and Recognition for Good Work.

None of the correlations in the last three columns--those involving the Teacher reaction and the two Principal Behavior Description Questionnaire scores--reached .20. The teachers' evaluations of the principals, as reflected in the Teacher Reaction Form score are almost completely unrelated to the in-basket category scores.

Some of the correlations with the Consideration and Initiating Structure scores are of interest because they are so low. For example, one might expect significant positive correlations of the Consideration score with certain in-basket measures such as Courtesy to Subordinates. Instead we find a negative correlation ($r = -.11$) Why? The answer may be found in the factor analysis of category scores. The analysis did not reveal a consideration or a courtesy factor; instead, Courtesy to Subordinates was found to have a sizeable loading on Factor H, Directing the Work of Others. Apparently

Courtesy to Subordinates, at least as revealed in the in-basket scoring, is a device used to soften the blow of assigning work, and is not a measure of consideration.

One might also expect that the Initiating Structure score would be associated with category scores which seem to imply strong leadership, such as Concluding Decision or Terminal Action. The correlations again turn out to be negative (-.16 and -.08 respectively). Again the factor analysis reveals the explanation. Concluding Decision and Terminal Action have high loadings on Factor C, Complying with Suggestions. High scores on these two categories seem to imply compliance rather than leadership.

Correlations with Group Interaction Categories

The correlations of subjective evaluations with scores obtained from the group interaction problem are shown in Table XI-18. The interaction scores in the upper half of the table were obtained from tabulations made by the experimenter and observer during the session, while the scores in the lower half were ratings made by the participants at the conclusion of the session.

The tabulations at the top of the table are in general unrelated to evaluations of the principals. The correlations of .26 and .23 for staff ratings should be discounted because of the fact that the tabulations and staff ratings were sometimes made by the same persons. A high rating might result in part from a staff member's recollections about the behavior of a principal he had observed during the group interaction problem.

The high correlations for staff ratings in the lower part of the table are not subject to the same limits on interpretation. The

TABLE XI-18. CORRELATIONS OF OVER-ALL RATINGS WITH GROUP INTERACTION CATEGORIES

Categories	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Frequency of Interaction	.10	.18	.26	.13	.12	.11
Gives Positive Information	-.00	.16	.19	.19	.12	.11
Asks for Information	.03	.06	.08	.08	.04	.02
Suggests New Procedures	.05	.08	.23	.08	.07	.05
Raises New Issues	.16	.04	.17	.07	.10	-.00
Presents Facts Effectively	.26	.24	.41	.19	.14	.14
Makes Decisions Effectively	.18	.17	.35	.14	.08	.12
Amount of Talking	.15	.25	.35	.16	.16	.10
Attempts to Influence	.09	.21	.16	.16	.16	.06
Friendliness	.06	-.02	.12	-.02	-.00	-.08

raters and principals, of course, observed some of the same behavior in the interaction problem. The participants made their ratings on the basis of performance in the interaction problem immediately following completion of the task, while the staff rating was made at the end of the test week and presumably on the basis of many more general observations. The correlations suggest that observation of group interaction may have provided an important basis for the staff evaluations. The staff ratings agreed best with evaluations of Effectiveness in Presenting Facts.

Teachers' evaluations generally speaking are unrelated to these interaction scores. But superiors tended to prefer principals who were judged to be effective in presenting facts, and the in-basket scorers evaluated most highly those who were judged Effective in Presenting Facts and in decision-making as well as those who were judged to have talked a lot.

Correlations with Educational Concerns

Table XI-19 shows correlations between the evaluations of the several classes of judges and scores on categories of instructional awareness that were derived from the concerns expressed in responses to the teacher evaluation problems and scores on categories of job performance value from the educational problems presented by way of tape-recorded conferences.

The number of concerns expressed by principals has little to do with superiors' evaluations, although all the correlations are positive. The highest correlations are .21 and .22 with job performance values about Pupil Personnel and Planning and Structure. Correlations are noticeably higher for the scorers' ratings, with most

TABLE XI-19. CORRELATIONS OF OVER-ALL RATINGS WITH CATEGORIES OF INSTRUCTIONAL AWARENESS AND CATEGORIES OF JOB PERFORMANCE VALUES

Category	Superiors' General Impression	In-Basket Scorers' Rating	Staff Members' Rating	Teachers' Reaction	Consideration	Initiating Structure
Instruction Awareness						
Objectives	.10	.24	.11	.05	-.09	.15
Evaluation	.03	.19	.02	-.05	-.19	.10
Planning	.11	.22	.05	.05	-.09	.08
Curriculum	.08	.24	.03	.12	.08	.06
Participation	.05	.24	.08	.08	.05	.04
Interest	.09	.24	.05	.17	.12	.10
Growth	.17	.27	.04	.15	.08	.13
Methods	.08	.29	.11	.12	.09	.01
Materials	.00	.21	.06	.07	.05	.03
Personality	.15	.34	.12	.12	.10	-.02
Classroom	.05	.10	.06	.06	.10	-.01
Climate	.12	.22	.06	.14	.09	.13
Job Performance Values						
Instruction	.15	.34	.16	.12	.08	.09
Pupils	.21	.25	.06	.16	.12	.06
Employees	.17	.23	.21	.10	.07	.13
Physical	.06	.08	.01	.07	.11	-.01
Structure	.22	.31	.13	.09	.03	.09
Public	.04	.13	.05	.02	.06	-.02

of the correlations exceeding .20 and two reaching .34. These higher correlations can perhaps be accounted for in terms of general quantity and quality of verbal output; both the rating and the scores are based on different samples of the writings of the principals.

Correlations with staff ratings are very low, although all are positive. Correlations with Teachers' Reaction, Consideration, and Initiating Structure are also uniformly low. It is interesting to note that principals who show instructional awareness for the category Evaluation are not thought to be considerate by their teachers ($r = -.19$).

Summary

To summarize the findings, the relationships reported above have been reduced to a short description of the "good" principal as seen by each of the panels of judges.

The good principal as seen by his superior--Superiors prefer those principals whom they view as well motivated for work in administration, who work well with others, who know their field, and who possess good academic skills. In addition, there are rather slight tendencies for superiors to prefer principals whose performance on a test of professional knowledge is good, who prepare for decision by planning many discussions, who are judged to be effective in presenting information to a group, and who express concern about pupil personnel and about planning and structure. The salient characteristic of the good principal, as viewed by his superior, seems to be the ability to communicate effectively and work well with others.

The good principal as seen by the in-basket scorer--The scorers chose the adjectives Urbane, Forceful, Painstaking, and Resourceful in describing the good principal. They clearly prefer principals who do well on tests of professional and general knowledge, reasoning, verbal ability, and fluency, and who tend to exchange information, prepare for decision by planning discussion meetings, organize their work, and write a lot in handling the in-basket items. There are also slight tendencies for the scorers to prefer principals who participate effectively in group problem solving, who express any of a wide variety of concerns in their solutions to educational problems, who in the opinion of supervisors know their field and have good communication skills, and whose interests are like those of psychologists. Here the most salient finding is that the scorers prefer principals whose written records of administrative behavior make them appear to be bright, well-educated people.

The good principal as seen by research staff members--The principals nominated by the research staff members as the best principals turn out to be those who get high scores on tests of professional and general knowledge and on measures of reasoning, verbal ability, and fluency. They are described by the scorers as Urbane and Resourceful and by superiors as knowing their field and having good communication skills. The research staff nominations also favor principals who are judged to participate effectively in group problem solving, and who in their administrative work tend to write a lot, exchange information, and organize their work. The research staff members tend to agree in their evaluations with the in-basket scorers, and the picture of the best principal is similar; staff members seem to prefer principals who are brig and well-educated.

The good principal as seen by teachers--The Teacher Reaction Form is a set of items to which teachers respond, and the score on this instrument is here used as a measure of the teachers' over-all evaluation. The measure is not a rating and is not entirely comparable with the other subjective evaluations. The nature of the measure is obviously influenced by the items it contains, and, as has been previously pointed out, many of them reflect Consideration. But there is perhaps a sufficient variety of items in the form to justify our using its score as an over-all measure of teacher preferences.

Findings from the study which tell us what kind of person the teachers like as principals are meager. Teachers like principals who are judged by their superiors as getting along well with teachers, parents, and children. There are small indications that teachers like principals who are effective in presenting facts to a group and who are not shy. There is a marked tendency for teachers to prefer principals who are judged to be Considerate on the Principal Behavior Description Questionnaire; but this relationship may be enhanced by similarities of items in the two scales. About all we are justified in concluding is that teachers like principals who get along amicably with others in the school situation.

Characteristics of considerate principals--Principals who received high scores on Consideration are judged by superiors to get along well with teachers and parents. They tend slightly to refrain from showing concern about evaluation and they tend to be young and inexperienced. Their interests are like those of sales managers (not physicians), and according to the personality inventory they are friendly and enthusiastic, not shy and insecure.

Characteristics of principals who Initiate Structure--There are tendencies for principals who receive high scores on Initiating Structure to be judged by their superiors to know administration; they tend to resemble presidents of manufacturing concerns in interests and to receive high scores on Character Strength on the personality inventory.

All the relationships discussed in this chapter are based on simple correlation coefficients. Undoubtedly many of the correlations are influenced by intervening variables which obscure the relationships as revealed by single correlation coefficients. In a later chapter some of these same interrelationships will be re-examined in the light of more powerful statistical techniques which permit control of the effects of a number of variables while investigating the influences of others.

CHAPTER XII

RELATIONSHIPS AMONG MEASURES OF PERFORMANCE

The major purpose of this and the following chapter is to bring together all of the measures that have been presented and discussed in earlier chapters and to examine their relationships. The factors found in the in-basket tests (reported in Chapter VII) will be used as a point of departure. This chapter will consider the first-order correlations between composite scores based on the in-basket performance factors and all the other variables pertaining to the principal's ability, personality, or performance.

These other variables include:

1. Thirteen superiors' rating items describing the principal's performance in his regular position. (See Chapter XI.)
2. Three scores based on teachers' questionnaire descriptions of their principal's performance in his regular position. (See Chapter XI.)
3. Two over-all ratings of the principal, one made by members of the research staff and the other by in-basket test scorers. (See Chapter XI.)
4. Twelve categories of instructional awareness that were expressed by the principals in response to the kinescopes which showed probationary teachers in their classrooms. (See Chapter IX.)
5. Six categories of job performance values based on the special educational problems that were presented by means of tape recordings. (See Chapter IX.)

6. Four biographical variables: age, total years in administration, total years of professional work, and total years of academic preparation.
7. Ten group interaction categories from the group interaction problem. (See Chapter X.)
8. Ten speech categories from the tape recording of the speech. (See Chapter X.)
9. Sixteen basic mental ability test scores. (See Chapter V.)
10. Four scores from the tests of professional and general knowledge. (See Chapter V.)
11. Five background achievement scores from a test of what the principal had learned during his study of the background material.
12. Fifteen basic personality factors. (See Chapter V.)
13. Ten scores from the Scorers' Check List. (See Chapter XI.)
14. Twelve background orientation categories. (See Chapter IX.)
15. Eighteen scores from the Strong Interest Inventory Blank. (See Chapter V.)
16. The 25 in-basket category scores which were not included among the 40 upon which the factor analysis reported earlier was based. (See Chapters VI and VII.)

The first section of this chapter will describe the development of a set of eight composite scores, one for each of the first-order in-basket test factors. The second section will present and discuss the correlations between the eight composite scores and each of the 165 variables mentioned above. The final section will consider the possibility of utilizing the second-order factors as a framework for a more general understanding of these relationships.

Composite Scores

As the first step in the analysis of the relationships between in-basket performance and the other 165 variables of the study, certain in-basket category scores were combined to form composite scores to represent each factor. Henceforth, these scores will be referred to as in-basket composite scores. To obtain a composite score, those category scores were combined that had the highest loadings on the factor involved, and that also had low loadings on all other factors. Simple weights were applied to the category scores before adding them, in order to compensate for major differences in variability of the category scores. The in-basket composite scores are approximate measures of the factor but will nevertheless be useful in examining relationships between in-basket test performance and other variables of the study. Table XII-1 gives the category scores selected to represent each factor, their loadings on the factor, their standard deviations, and the weights assigned to raw scores to obtain the composites.

In-basket composite scores for A through H were computed for each principal on the three Whitman School In-Basket Tests combined. Table XII-2 presents the means, standard deviations, estimated reliabilities, and intercorrelations for the scores. The Bureau of Business In-Basket Test was eliminated from the composite scores to focus attention on performance in the school situation.

Correlations With Other Variables

Each of these 165 variables was correlated with each of the eight factor scores and with the category score Number of Words.

TABLE XII-1. COMPOSITION OF THE EIGHT IN-BASKET COMPOSITE SCORES[a]

Composite	Scoring Category	Oblique Factors Loading	SD	Weight
A. Exchanging Information	Asks Subordinates	.50	7.99	1
	Informs Subordinates	.45	6.52	1
B. Discussing Before Acting	Discusses with Subordinates	.62	10.14	1
	Communicates Face-to-Face	.60	12.65	1
	Decides on Procedure	.46	11.50	1
C. Complying with Suggestions	Concluding Decision	.73	11.52	1
	Follows Subordinates	.65	5.07	2
	Terminal Action	.59	10.31	1
D. Analyzing the Situation	Program Values	.82	4.64	1
	Conceptual Analysis	.75	7.04	1
E. Maintaining Relationships	Superiors Involved	.54	4.74	2
	Discusses with Superiors	.42	4.78	2
	Outsiders Involved	.41	7.85	1
	Relates to Other Materials	.37	7.00	1
F. Organizing Work	Immediate Work Scheduled	.50	7.18	1
	Intermediate Work Scheduled	.51	7.46	1

TABLE XII-1 (Cont'd)

Composite	Scoring Category	Oblique Factors Loading	SD	Weight
G. Responding to Outsiders	Informs Outsiders	.44	4.18	1
	Follows Outsiders	.41	3.96	1
	Courtesy to Outsiders	.44	3.87	1
H. Directing Others	Leading Action	.64	14.94	1
	Courtesy to Subordinates	.57	13.64	1
	Directs	.47	13.74	1

[a]Data are for all four in-basket tests combined.

TABLE XII-2. MEANS, STANDARD DEVIATIONS, ESTIMATED RELIABILITIES, AND INTERCORRELATIONS FOR EIGHT IN-BASKET COMPOSITE SCORES[a]

Composite Score	A	B	C	D	E	F	G	H	Mean	SD	Est. Relia.
A. Exchanging Information		.47	.09	.23	.44	.32	.32	.50	29.14	9.60	.78
B. Discussing with Others	.47		-.15	.28	.51	.57	.26	.35	96.24	25.44	.92
C. Complying with Suggestions	.09	-.15		-.01	.17	-.20	.35	.08	104.30	18.63	.88
D. Analyzing the Situation	.23	.28	-.01		.28	.17	.22	.13	13.69	8.83	.77
E. Maintaining Relationships	.44	.51	.17	.28		.34	.47	.36	86.59	19.04	.81
F. Organizing Work	.32	.57	-.20	.17	.34		.11	.31	23.69	11.41	.83
G. Responding to Outsiders	.32	.26	.35	.22	.47	.11		.33	34.32	7.71	.70
H. Directing Others	.50	.35	.08	.13	.36	.31	.33		88.88	31.34	.93

[a] Data are for the three Whitman School In-Basket Tests (business test omitted)

The resulting 9 x 165 matrix is presented in Table XII-3. The discussions that follow will be based upon the correlations in Table XII-3, but on occasion will also involve correlations presented elsewhere in this report, or on special sets of correlations computed specifically to illustrate a point under consideration.

Cautions

The standard error of a correlation of .00 computed on a sample of 232 cases is .066. If a set of correlations such as those in Table XII-3 were computed on a completely chance basis, such as a set of random numbers, then it would be expected that 10 per cent or 149 correlations would have a value of at least plus or minus .11; one per cent or 15 correlations would reach a value as high as plus or minus .17; and at least one correlation in the entire table would be as large as plus or minus .20. It is necessary, therefore, to exercise caution in the interpretation of the 1485 correlations presented in Table XII-3. With minor exceptions, only those correlations exceeding plus or minus .20 will be considered in the interpretation.

A second important consideration in interpreting relationships of the other measures with the composite scores stems from the inherent complex made up of each of the composite scores. Each category score from which the composite score was formed and, hence, each composite score also is made up of at least two of the following three components or parts: (1) a component of the amount of work has been identified as second-order factor Y, (2) a component of preparing for decision vs. taking action immediately identified as second-order factor X, and (3) a component that is independent of the two second-ord components and that is largely unique to a single composite score in the sense that it is not present to any appreciable degree in the

TABLE XII-3. CORRELATIONS OF EIGHT IN-BASKET COMPOSITE SCORES AND THE CATEGORY NUMBER OF WORDS WITH 165 OTHER VARIABLES

Variable	Composite Score								Number of Words	Estimated Relia-bility(1)
	A	B	C	D	E	F	G	H		
In-Basket Scoring Categories										
Rejections	.10	.03	.02	.16	.13	.13	.08	.13	.17	.59
Outside Groups Involved	.29	.24	.28	.09	.36	.01	.48	.14	.38	.44
Recognition for Good Work	.39	.37	.06	.32	.27	.15	.18	.25	.36	.71
Insensitive	-.08	-.19	.15	-.17	-.04	-.14	-.11	.01	-.07	.38
Prejudges	-.10	-.07	.18	.06	.08	-.06	.05	-.02	.04	.35
Human Values	.30	.35	-.16	.48	.22	.17	.12	.12	.32	.43
Discusses with Principals	.10	.15	.14	.01	.12	.09	.21	.12	.13	.39
Asks Superiors	.29	.20	-.03	.13	.45	.23	.14	.09	.24	.41
Asks Outsiders	.33	.33	-.20	.16	.26	.27	.11	.12	.24	.46
Contingent Decision	.10	.25	-.06	.12	.27	.09	.14	-.09	.23	.38
Coordination	.25	.17	-.13	.22	.11	.21	.04	.24	.16	.41
Complete Delegation	-.06	-.10	.17	-.10	-.05	-.11	-.05	-.10	-.06	.31
Controlled Delegation	-.09	-.10	-.03	-.02	-.00	-.07	-.01	-.06	-.07	.24
Uncontrolled Delegation	.05	-.08	.11	-.09	.12	-.13	.03	.22	.04	.59
Refers to Superiors	.13	.03	.10	.06	.30	.02	.05	.01	.16	.17
Informs Superiors	.15	.02	.12	.06	.42	.01	.29	.13	.21	.24
Explains to Subordinates	.30	.08	-.05	.26	.14	.12	.18	.28	.20	.53
Explains to Superiors	.10	.05	.02	.16	.20	.02	.19	.18	.21	.19
Explains to Outsiders	.17	.09	.08	.12	.15	.02	.28	.11	.24	.18
Courtesy to Superiors	-.01	-.12	-.08	.12	.07	-.06	.10	.25	.07	.53
Informality to Superiors	.13	-.01	.02	-.04	.11	.08	-.04	.08	.01	.64
Informality to Outsiders	.03	-.02	.11	-.03	.07	.04	.07	.11	.11	.00
Supports Staff	.09	.17	.09	.08	.21	.03	.07	-.05	.10	.06
Sets Deadline	.24	.08	-.05	.05	.14	.21	.09	.35	.27	.36
Follow-Up	.18	.07	-.03	.07	.10	.10	.07	.18	.15	.01
Categories of Instr. Awareness										
Objectives	.28	.29	-.29	.25	.16	.25	.09	.24	.26	.77(c)
Evaluation	.28	.13	-.19	.16	.16	.15	.13	.22	.27	.77(c)
Planning	.22	.28	-.10	.27	.19	.23	.11	.16	.25	.67(c)
Curriculum	.28	.25	-.08	.20	.25	.15	.20	.17	.30	.66(c)
Participation	.21	.26	.00	.09	.18	.22	.12	.06	.27	.50(c)
Interest	.17	.30	.03	.12	.17	.22	.15	.07	.30	.56(c)
Growth	.25	.28	-.04	.28	.21	.19	.21	.16	.25	.68(c)
Methods	.30	.31	-.08	.13	.23	.30	.17	.16	.32	.64(c)
Materials	.24	.20	.00	.16	.20	.12	.18	.14	.26	.63(c)
Personality	.35	.32	-.02	.08	.28	.24	.24	.18	.39	.67(c)
Classroom	.04	.19	.08	-.05	.08	.08	.01	.00	.09	.50(c)
Climate	.15	.21	.06	.10	.12	.16	.13	.07	.23	.58(c)
Categories of Job Perform. Values										
Instruction	.35	.20	.02	.16	.29	.20	.31	.17	.39	.49(c)
Pupils	.29	.20	.15	.24	.26	.18	.27	.05	.34	.36(c)
Employees	.31	.29	.06	.16	.35	.28	.26	.12	.37	.16(c)
Physical	.07	-.06	.12	.02	.14	.04	.06	.02	.13	.15(c)
Structure	.26	.35	-.08	.19	.21	.28	.20	.18	.30	.28(c)
Public	.24	.13	.03	.06	.21	.12	.17	.07	.24	.21(c)
Group Interaction Categories										
Frequency of Interaction	.12	.12	-.02	.00	.13	.13	-.05	.13	.07	.43(d)
Gives Positive Information	.15	.07	.03	.09	.20	.05	-.02	.08	.13	.47(d)
Asks for Information	.18	.01	-.08	.14	.05	.06	-.02	.15	.01	.26(d)
Raises New Issues	.02	.09	-.03	.04	.08	.00	.08	.01	.05	.20(d)
Presents Facts Effectively	.24	.18	.00	.12	.13	.17	.04	.22	.20	.30(d)
Makes Decisions Effectively	.19	.19	.05	.12	.18	.22	.05	.20	.26	.12(d)
Amount of Talking	.15	.15	.01	.15	.18	.14	.07	.15	.20	.36(d)
Attempts to Influence	.10	.09	.07	.07	.13	.08	.09	.20	.13	.39(d)
Friendliness	.04	-.05	-.06	-.03	-.02	-.03	-.04	.00	.02	.28(d)
Suggests New Procedures	.04	.13	-.07	.10	.09	.13	-.10	.13	.00	.32(d)

TABLE XII-3. (CONT'D.)

Variable	Composite Score								Number of Words	Estimate Relia-bility
	A	B	C	D	E	F	G	H		
Speech Categories										
Length	.08	.21	-.14	.07	.02	.19	-.04	.19	.04	--
Introduction	.30	.28	-.20	.15	.21	.28	.04	.32	.24	.64
Organization	.33	.28	-.15	.24	.19	.27	.12	.29	.29	.90
Conclusion	.30	.26	-.17	.17	.16	.23	.05	.19	.26	.85
Word Usage	.39	.28	-.04	.16	.20	.18	.24	.29	.35	.79
Clarity	.39	.23	-.01	.16	.27	.22	.23	.28	.29	.88
Voice Control	.31	.27	-.15	.21	.17	.24	.05	.22	.25	.86
Voice Interest	.26	.24	-.07	.10	.12	.19	.05	.18	.22	.79
Pronunciation	.43	.33	.03	.26	.25	.18	.22	.28	.32	.70
Efficiency	.29	.30	-.21	.20	.16	.27	.06	.28	.25	.60
Basic Mental Abilities										
General Reasoning	.24	.24	.23	.14	.27	.21	23	.19	.33	.70(a)
Deductive Reasoning	.22	.14	.14	.22	.23	.10	.22	.20	.19	.58(a)
Inductive Reasoning	.35	.31	.06	.11	.33	.26	.16	.27	.33	.52(a)
Verbal Knowledge	.42	.29	-.04	.32	.33	.23	.23	.17	.34	.69(a)
Associative Memory 1	.15	.08	.03	-.07	.02	.11	-.02	.13	.02	.50(a)
Associative Memory 2	.19	.11	.05	.17	.10	.11	.16	.06	.15	.50(a)
Number Facility 1	.31	.24	.11	.09	.28	.25	.24	.22	.38	.85(a)
Number Facility 2	.31	.30	.09	.16	.34	.31	.25	.25	.44	.85(a)
Speed of Closure 1	.28	.26	.02	.08	.29	.25	.08	.25	.30	.49(a)
Speed of Closure 2	.17	.23	.10	.05	.20	.18	.12	.10	.14	.51(a)
Flexibility of Closure	.27	.29	.13	.16	.25	.19	.23	.16	.32	.67(a)
Visualization	.22	.26	.09	.13	.27	.16	.22	.19	.25	.67(a)
Word Fluency	.41	.26	.08	.15	.33	.21	.20	.29	.33	.70
Expressional Fluency	.25	.21	.05	.01	.23	.19	.12	.18	.25	.72
Ideational Fluency	.35	.32	.05	.25	.27	.21	.19	.26	.36	.71
Associational Fluency	.38	.33	.02	.18	.36	.28	.28	.24	.36	.59
Professional and General Knowl.										
Administration & Supervision	.50	.47	.05	.32	.41	.35	.28	.28	.42	.89
Elementary Education	.50	.45	.01	.32	.42	.31	.26	.22	.45	.95
Social Studies	.50	.37	.06	.29	.33	.29	.25	.26	.42	.89
Science & Mathematics	.23	.26	.14	.15	.19	.15	.19	.18	.26	.85
Background Achievement										
Community	.34	.41	.12	.21	.31	.32	.16	.23	.42	.55(b)
Educational Program	.31	.37	.20	.12	.30	.28	.15	.22	.41	.21(b)
School Staff	.30	.34	.23	.16	.32	.25	.16	.14	.41	.33(b)
Funds and Facilities	.32	.25	.15	.09	.23	.21	15	.23	.39	.32(b)
Organization	.25	.28	.17	.21	.22	.14	.20	.16	.32	.21(b)
Basic Personality Factor										
Friendly	.04	-.01	-.06	-.10	.02	.04	-.05	.01	-.02	.60
Emotional Stability	.00	.12	.07	.04	.01	.04	.01	.06	.10	.38
Dominance	-.03	.01	-.08	.14	.00	.10	-.03	.03	-.04	.46
Enthusiastic	.01	.07	.03	-.02	.08	.14	-.06	.06	.02	.66
Character Strength	-.19	-.18	.08	-.11	-.11	-.09	-.11	-.10	-.09	.16
Adventurous	-.03	.09	-.14	.09	.04	.04	-.03	-.01	-.01	.83
Emotionally Sensitive	.26	.13	-.05	.03	.14	.05	.07	.04	.20	.32
Suspicious	-.03	-.11	.15	-.06	.00	.00	.02	.00	.02	.52
Nonconventional	.20	.08	-.12	.03	.05	.05	.09	.06	.09	.30
Sophistication	-.06	-.08	-.06	.04	-.02	.03	-.10	-.04	-.16	.36
Insecurity	.03	-.02	.05	-.03	-.07	.01	-.04	-.01	-.06	.68
Radicalism	.05	.03	-.10	.13	-.02	.03	.00	.07	.00	.35
Self-Sufficiency	.09	.05	.08	.12	.04	.01	.09	.05	.11	.55
Will Control	-.09	-.09	-.02	-.09	-.12	-.08	-.09	-.06	-.09	.55
Nervous Tension	.00	.00	.01	-.01	.03	.09	-.07	-.05	-.04	.78

TABLE XII-3. (CONT'D.)

Variable	Composite Score								Number of Words	Estimated Relia-bility(1)
	A	B	C	D	E	F	G	H		
corers' Check List										
rbane	.47	.50	.06	.26	.38	.37	.31	.43	.49	.68
orceful	.40	.35	.23	.16	.32	.24	.32	.45	.45	.51
lipshod	-.37	-.36	.14	-.15	-.24	-.31	-.23	-.39	-.36	.45
old	-.13	-.18	.12	-.04	-.10	-.13	-.19	-.17	-.14	.44
esourceful	.53	.48	-.05	.28	.46	.33	.23	.44	.44	.53
ogical	.32	.35	-.07	.20	.31	.28	.20	.29	.33	.47
actful	.34	.38	-.14	.12	.25	.27	.27	.30	.29	.45
ordy	.42	.34	-.22	.18	.38	.27	.33	.44	.51	.58
ourteous	.14	.18	.00	.03	.12	.12	.25	.29	.28	.47
itty	.39	.22	-.01	.24	.34	.17	.12	.21	.25	.56
ackground Orientation Categories										
ommunity Institutions	.05	-.04	.00	.02	.05	.01	.06	.08	.14	.20
ommunity Concerns	.23	.13	.04	.06	.10	.07	.07	.22	.22	.18
ommunity Dynamics	.10	.07	-.01	.17	.02	.15	.01	.11	.07	.29
arental Influence	-.01	-.02	.15	.08	.00	-.04	-.05	.00	.04	.07
upil Characteristics	.18	.09	-.01	.05	.06	.07	.12	.12	.12	.30
upil Discipline	-.14	-.02	.04	.04	-.04	.05	-.04	-.06	-.04	.09
upil Education	.23	.20	-.06	.18	.17	.22	.09	.21	.26	.32
taff as People	.14	.12	-.01	-.02	.03	-.02	-.07	-.01	.09	.23
eacher Qualifications	.04	.02	-.17	.02	.02	.08	.05	.05	.07	.16
taff as Educators	.09	.01	-.05	-.03	-.04	-.01	-.01	-.11	-.02	.19
ynamic Politics	.03	.18	.12	.04	.12	.14	-.01	.11	.07	.20
unds & Budgets	-.01	.05	.01	.09	.14	.09	.12	.03	.05	.38
trong Vocational Interest Blank										
sychologist	.31	.18	-.10	.22	.17	.16	.12	.16	.18	.88(e)
ath-Science Teacher	-.15	-.15	.09	.03	-.14	-.07	.02	-.14	-.16	.88(e)
ngineer	-.11	-.08	.14	.01	-.08	-.05	.02	.00	-.04	.94(e)
ersonnel Manager	.07	.08	-.14	.15	.08	.14	.07	.10	-.02	.82(e)
ublic Administration	.08	.10	-.10	.19	.03	.15	.05	.11	.04	.76(e)
ocial Science Teacher	.05	.02	-.11	.10	.01	.09	.00	-.05	.04	.89(e)
ity School Superintendent	.20	.11	-.13	.16	.09	.04	.08	-.01	.09	.84(e)
inister	.19	.04	-.16	.15	.11	-.01	.08	-.07	.04	.90(e)
awyer	.25	.22	-.09	.11	.14	.16	.01	.19	.20	.88(e)
resident Mfg. Concern	-.07	-.04	.04	-.09	.01	-.02	-.03	.01	.01	.82(e)
ccountant	-.16	-.20	.03	-.09	-.17	-.02	-.04	-.04	-.14	.84(e)
roduction Manager	-.24	-.17	.11	-.03	-.14	-.05	-.04	-.05	-.18	.85(e)
hysician	.05	-.01	.02	.10	-.01	-.07	-.01	.02	.03	.89(e)
urchasing Agent	-.21	-.14	.11	-.14	-.16	.02	-.05	-.02	-.11	.85(e)
ales Manager	.02	.08	-.09	-.03	.08	.13	-.03	.12	.04	.90(e)
oliceman	-.28	-.21	.09	-.03	-.19	-.11	-.08	-.13	-.26	.83(e)
asculinity-Femininity	-.20	-.12	.06	-.01	-.12	-.02	.01	-.04	-.16	.93(e)
ccupational Level	.12	.17	-.04	.03	.15	.09	.07	.13	.21	.88(e)
iographical Information										
ge	.01	.03	-.19	.13	.01	-.01	.01	.03	.03	--
dministrative Experience	.08	-.03	-.16	.18	.07	.00	.03	.06	.04	--
otal Experience	.09	.04	-.19	.17	.06	.04	-.01	.04	.08	--
cademic Preparation	.03	.11	-.03	.02	-.02	.04	.04	.14	.01	--
uperiors' Ratings										
nterest in Work	.22	.25	-.12	.16	.14	.15	.07	.06	.15	.77(c)
ticking to a Job	.22	.19	-.07	.15	.08	.13	.05	.07	.12	.77(c)
etting Along with Teachers	.01	.16	-.01	.06	.09	.06	.03	-.09	.04	.79(c)
etting Along with Parents	.03	.13	-.03	.06	.05	.10	.05	-.03	.05	.71(c)
etting Along with Superiors	.05	.11	.02	.02	.07	.08	.10	-.04	.04	.82(c)
Knowledge of Administration	.21	.20	-.06	.20	.12	.20	.07	.08	.15	.81(c)

TABLE XII-3. (CONT'D.)

Variable	Composite Score								Number of Words	Estimat Relia bilit
	A	B	C	D	E	F	G	H		
Superiors' Ratings (Cont'd.)										
Knowledge of Teaching	.31	.28	-.11	.21	.10	.17	.06	.17	.20	.84(
Rapport with Children	-.05	.16	-.14	-.04	.02	.05	-.07	-.02	.02	.61(
Written Communication	.20	.16	-.01	.19	.05	.10	.08	.08	.14	.75(
Understanding	.24	.32	-.04	.17	.13	.22	.11	.17	.22	.77(
Oral Communication (Formal)	.28	.24	-.06	.17	.12	.21	.08	.16	.21	.77(
Oral Communication (Informal)	.28	.38	-.04	.14	.20	.27	.08	.15	.24	.77(
Over-all Impression	.17	.24	-.05	.10	.12	.16	.06	.07	.14	.89(
Teachers' Questionnaire Scores										
Consideration	.02	.05	.17	-.04	.13	.00	.04	-.05	.11	.83
Initiating Structure	.03	.02	-.12	.02	-.01	.03	-.07	.02	.05	.83
Teachers' Reaction	.11	.10	.04	.03	.12	.05	.01	-.01	.14	.82
Other Impressions										
In Basket Scorers' Ratings	.59	.54	.13	.29	.47	.34	.41	.52	.61	.72
Staff Members' Ratings	.28	.19	.02	.08	.22	.11	.10	.13	.26	.6[illegible]

(1) Reliability estimates were made by a number of differing methods. The method chosen was considere most appropriate in view of the nature of the scores and data available. The most common involved correlati split halves of the total score and correction by the Spearman-Brown formula. When other methods were used these are indicated as follows: (a)=highest correlation with a similar test; (b)=Kuder-Richardson Formula #2 (c)=Corrected intraclass correlation; (d)=test-retest correlations; and (e)=published source.

other of the composite scores. These components are functionally inseparable; the second-order factors may be thought of as generating the performance expressed or made observable by the unique component. Second-order factors can be considered independently only by special analysis. The correlation between a composite score and another variable is influenced by all three of these components and in proportion to the relative weight of the components in the scores. (The problem of the complexity of in-basket tests scores will be considered again in the final section of this chapter and will be the object of a major analysis to be reported in the following chapter.)

A third caution concerns the differences in the reliability of the measurement of each of the variables. If two variables are measured with different reliabilities, their probability of showing a correlation of a given value with a third variable is in turn affected. A variable measured less reliably than another may show a lower correlation with the third variable, even though the "true" relationship of the two with a third is the same. In the interpretation of the sets of correlations, such as those presented in Table XII-3, where the purpose is to understand the nature of the relationships, interest is in the "true" relationship rather than in the "observed" one.

For easy reference, the estimates of the reliability of each of the 165 variables are listed in the tenth column of Table XII-3.

A general inspection of the correlations reported in Table XII-3 shows that a large proportion of the coefficients are larger than can be explained by the null hypothesis of no real relationship between the composite scores and the other variables. (Approximately

465 reach or exceed ±.17, the .01 level of significance as compared with 15, the number expected by chance.) Significant correlations occur in each of the areas used in the organization of Table XII-3.

Estimated Number of Words

The scoring category Number of Words is included in the Table XII-3 because of its significance for an understanding of the results of the study. In the case of many of the major variables in Table XII-3, written responses provided all of the information from which the scores were derived. All the measures of performance from the in-basket situations were based upon written responses. All the measures of concerns expressed in response to the films showing the work of probationary teachers and in response to the tape recorded educational problems were also derived from written responses. Should a principal be handicapped by lack of ability or inclination to write, he would be at a serious disadvantage in attempting to show his skill as an administrator in these test situations.

Many of the problems that were introduced into the in-basket tests in real life could be expected to occur during formal or informal face-to-face interactions and might have been handled on the spot without writing. Since for this study the work of each principal had to be available for inspection and scoring, however, it was necessary to require all responses to in-basket tests to be put into writing. This requirement, which is basic to the methodology of the study, might be responsible for the appearance of an artificial emphasis upon writing skill in the results.

To what extent are the findings limited by the emphasis on writing as a method of collecting data? At one extreme, the study might be regarded as a grand test of the principals' ability to produce quantities of written material under stressful conditions and within the time limits permitted. Many of the principals, on occasion, complained good-naturedly of "writer's cramps." From their point of view, huge quantities of writing certainly had to be produced.

The data of the study, however, do not support such an extreme interpretation. The eight composite scores show a marked variation in their correlations with the category score, Number of Words. These correlations are as follows:

TABLE XII-4. CORRELATION OF COMPOSITE SCORES WITH NUMBER OF WORDS

Composite	Correlations with Number of Words
A. Exchanging Information	.63
B. Discussing before Acting	.59
C. Complying with Suggestions	.27
D. Analyzing the Situation	.27
E. Maintaining Relationships	.66
F. Organizing Work	.40
G. Responding to Outsiders	.55
H. Directing Others	.64

Correlations of the 12 categories of instructional awareness used in scoring responses to the films with Number of Words range from .26 to .39. The six categories of job performance values based on responses to the tape-recorded problems range from .13 to .40. There can be little doubt that the quantity of writing produced can be used to "explain" a part of the observed relationships among variables; but it is equally clear that the quantity of writing cannot explain all relationships.

The question of proper interpretation of relationships between some of these performance scores may be viewed in other ways. First, the ability to accomplish large quantities of written work under stress of time pressures may be regarded as necessary for successful administration. Certainly, ability to write and to use language skills effectively can be defended as a reasonable requirement for those who provide educational leadership. Second, the principals involved in this study each had demonstrated a high degree of literacy by the fact of having completed from two to seven years of college work. Every principal should have had the minimum essential ability to write. Third, no particular attention was given in this study to writing skill such as would be reflected in proper grammar, word usage, or composition. Emphasis in scoring was entirely upon differences in responses which pertained to variables of administrative performance.

The most satisfactory way of regarding the emphasis placed upon writing is to recognize the presence of such an emphasis, but at the same time to look for the other important differences in the performance of principals that clearly show through the sheer amount of writing done. The methods employed in this research are basically similar to methods used in other fields of scientific investigation. In the study of microscopic structures of organisms, for example, stains are used to prepare tissues for observation. Staining clearly may introduce artifacts of color, etc. in what is observed directly, but the technique is nevertheless invaluable in making observable structures that could not otherwise be studied. Artifacts introduced by a method of investigation, if recognized and properly regarded, do not invalidate the use of that method or technique of investigation. Many important facts about administrative performance can be noted in the data of this study that cannot be explained by the amount of writing the principals did during the test week.

Composite Score A: Exchanging Information

The role of the administrator in organizational communication, which has long been recognized, emerges clearly in the factor analysis of the in-basket test responses. The specific behaviors most clearly involved in the exchange of information are asking others for information (or opinion) and giving others information (or opinion). The principal thus appears as an important "center" in a communication net. His communication activities link him with his superiors, with his teachers and pupils and with the general community. From the point of view of an organizational communication net, the principal appears as a channel through which superiors, subordinates and outsiders communicate with each other about school issues.

As might be expected, many of the other measures of the principal's performance are related to the degree to which he exchanges information. This section will point up differences in abilities, performance, and other personal characteristics between the "high communication" and "low communication" principals.

One important aspect of exchanging information appears to be the communication of affect or sentiment. This is suggested by the fact that Composite Score A, Exchanging Information, is positively related to Recognition for Good Work ($r = .39$) and to Human Values ($r = .30$). Thus it seems that the content of the communication involved in this composite score includes not only fact and opinion but also attitudes of recognition and approval or disapproval.

His exchanging information is also related to the principal's performance in test situations other than the in-basket. Exchanging information is clearly related to the concerns expressed by the principals in completing their reports and interview outlines for the three probationary teachers. Concerns about personality (r = .35), methods of instruction (r = .30), objectives (r = .28), evaluation (r = .28), curriculum (r = .28), child growth and development (r = .25), materials used in instruction (r = .24), planning (r = .22), and pupil participation (r = .21) are expressed more frequently by the principals who score high on Composite A, Exchanging Information. Likewise, in responding to the five educational problems presented by tape recordings, the "high communication" principals show more concern with instruction and curriculum (r = .35), employees as persons (r = .29), planning (r = .26), and public relations (r = .24). In the group interaction situation the high communication principals were recognized by the members of their groups as the more effective in presenting facts (r = .24) and making decisions (r = .19).

The principal's performance in delivering the speech to the PTA shows a definite, positive relation to their scores on Composite A. High communication is related to pronunciation (r = .43), word usage (r = .39), clarity (r = .39), voice control (r = .31), and voice interest (r = .26), in the delivery of the speech, and to making an effective introduction (r = .30) or conclusion (r = .30) to the organization of the body of the speech (r = .33) and to interest and efficiency (r = .29).

Table XII-3 also contains information about the basic mental abilities, knowledge, vocational interests, and basic personality factors that are more characteristic of the "high communication" principals. "High communication" principals scored higher than the "low" on both of the two special professional examinations that were administered prior to the test week: the administration and supervision examination (r = .50) and elementary education (r = .50). Both examinations measure knowledge of educational procedures and practices and may be viewed as indicative of the technical or professional competence of the principal. The relationships suggest that possession of professional knowledge may be necessary for effective exchange of information.

The principals who displayed higher amounts of communication in the in-basket test situations also scored higher on the two sections of the NTE, Common Examination: Social Studies, Literature, and Fine Arts (r = .50) and Science and Mathematics (r = .23). These tests were administered during the test week to measure each principal's over-all achievements in the two general knowledge areas. It appears that achieving a liberal educational background is also consistent with effective exchange of information.

Many of the short tests of basic mental abilities were found to be related to high Composite A scores. Verbal knowledge (r = .42) and word fluency (r = .41) especially characterized the principals who scored high on Composite A. Other abilities related to high scores on this composite include: associational fluency (r = .38), inductive reasoning (r = .35), ideational fluency (r = .35), number facility (r = .31 and .31), speed of closure (r = .28 and .17), flexibility of closure (r = .27), expressional fluency (r = .25), general reasoning (r = .24), deductive reasoning (r = .22), and visualization (r = .22). These relationships obviously involve a wide spectrum of basic abilities.

In the area of basic personality factor, the high communication principals are relatively more emotionally sensitive (r = .26), and show less regard for conventions (r = .20). In general, those principals who show high communication patterns on the in-basket test can be described (by reference to their 16 PF scores) as sensitive, gentle, aesthetic, and not overly committed to convention or rules of conduct.

In their performance during the study of background materials the high communication principals appeared to have an orientation toward both the educational needs of pupils (r = .23) and toward the concerns of the community (r = .23). Their interests, as measured by the Strong Vocational Interest Blank, tended toward those of psychologist (r = .31), lawyer (r = .25), and city school superintendent (r = .20). In contrast, their interests were negatively related to those of policeman (r = -.28), production manager (r = -.24), purchasing agent (r = -.21), and tend toward the feminine side of the masculinity-femininity continuum (r = -.20). Neither age, experience, nor years of academic preparation show notable relationships to Composite A.

The amount of exchanging information that characterizes a principal's administrative performance is also clearly and positively related to the impressions he made on his superiors or outsiders who had an opportunity to view the products of his work. Superiors, in making their ratings, indicated that the principals with high Composite A scores had greater knowledge of teaching (r = .31), oral communication skill (r = .28), ability to understand instructions (r = .24), interest in their work (r = .22), ability to stick to a job (r = .22), knowledge of administration (r = .21), and written communication skill (r = .20). The in-basket test scorers' ratings favored these principals (r = .59). On the check list the scorers described their impressions of the high communication principals by more frequently checking such personal qualities as resourceful (r = .53), urbane (r = .47), wordy (r = .42), forceful (r = .40), witty (r = .39), painstaking (r = .37), tactful (r = .34), and logical (r = .32).

The members of the research staff also were favorably impressed by principals who scored high on Composite A (r = .28). Teachers' reactions and their reports on the leadership behavior of their principals did not, however, show a significant relationship with Composite A scores.

In summary, Exchanging Information (Composite A) in school administration relates to many areas of the principal's work and seems to be associated with a broad spectrum of basic abilities plus possession of professional knowledge. The interests, orientations, and personal qualities of those principals who show high communication patterns in their work indicate that they are concerned with pupil needs and with the community, and are interested in people and facts about them.

Composite Score B: Discussing with Others before Acting

The in-basket performance factor Discussing with Others before Acting is represented by Composite B. The 232 principals differed widely in the frequency with which they planned to involve others in discussion of problems before taking final action on them. Such discussion may be viewed in two ways. On one hand it may be seen as a method used by the uninformed or less competent principal simply to obtain information and help with a problem; on the other hand it may be seen as a method used by a competent principal who recognizes the full complexity of a problem situation and the need for more information or the desirability of involving others before he acts. That the former may not always be the case will be seen by the data that follow, which show that those principals who scored high on Discussing before Acting (Composite B) tended to perform better and to be rated higher by superiors and by the in-basket scorers than were those who scored low. Discussion is not only a means of securing information to insure better decisions on given problems, but may also be a step toward carrying a decision into action.1/

Discussion with others overlaps considerably with the area just discussed, Exchanging Information (the correlation between Composite Scores A and B is .47).

Composite B is related to some of the category scores from the in-basket that were not among the 40 used in the factor analysis. First to be noted is that Composite B is related to giving recognition for good work (r = .37) and to the use of human values (r = .35). The relationships suggest that discussions may be used,

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1/ In order to avoid appearing inconsistent with the results of the analysis reported in the following chapter, the results of that analysis must be anticipated. That part of discussing with others which is associated with the second-order component, Preparation for Decision, accounts for the positive relationship noted here. Discussion not related to preparing for decision is negatively regarded by superiors.

in part at least, to communicate or make sentiments and attitudes clear. The small negative correlation with scores on being socially insensitive (r = -.19) adds to the meaning of this composite score as including more than the use of discussion to secure assistance in making decisions.

As contrasted with Exchanging Information (Composite A), Discussing before Acting obviously involves plans for the face-to-face mode of communication to a far greater extent than either telephoning or writing.

Scores on Composite B are related to other activities of the test week, including measures of instructional awareness expressed by the principals in completing their reports and interview outlines on the probationary teachers. Concerns about the teacher's personality (r = .32), methods of instruction (r = .31), pupil interest (r = .30), objectives (r = .29), planning and continuity (r = .28), pupil participation (r = .26), curriculum (r = .25), classroom climate (r = .21), and materials of instruction (r = .20) are expressed more frequently by principals who indicate more often that they plan to discuss problems with others. This same general positive relationship continues to be observed in the principals' reactions to the tape recorded problems. The correlations between Composite B and the job performance values planning (r = .35), employed personnel (r = .29), instruction and curriculum (r = .20), and pupil personnel (r = .20) show this relationship.

The length of speech delivered by the principal in addressing the local P.T.A. is related to high Composite B scores (r = .21) as is each of the categories that were employed to score the speech:

introduction (r = .28), organization (r = .28), conclusion (r = .26), word usage (r = .28), clarity (r = .23), voice control (r = .27), voice interest (r = .24), pronunciation (r = .33), and efficiency (r = .30).

The scores earned on the professional and general knowledge examinations show a positive correlation with Composite B scores: administration and supervision (r = .47), elementary education (r = .45), social studies (r = .37), and science and mathematics (r = .26). Principals scoring high on Composite B mastered the background materials to a greater degree than those who made lower scores. Composite B scores are related to achievement of knowledge about the community (r = .41), educational program (r = .37), staff (r = .34), organization (r = .28), and funds and facilities (r = .25). Many of the basic mental ability tests scores were also related to Composite B, including: associational fluency (r = .33), ideational fluency (r = .32), inductive reasoning (r = .31), number facility (r = .24 and .30), verbal knowledge (r = .29), flexibility of closure (r = .29), visualization (r = .26), word fluency (r = .26), general reasoning (r = .24), speed of closure (r = .26 and .23) and expressional fluency (r = .21). Again the spectrum of abilities related to high performance in the area is wide, but verbal knowledge and word fluency do not dominate the list as strongly as in the case of Composite A, Exchanging Information. Fluency in forming associations or obtaining ideas receives relatively more emphasis.

The basic personality factors do not illuminate the type of principal who scored high on Composite B.

With respect to the background materials, principals who are high on Composite B tend to show a concern with the educational needs of pupils (r = .20) and, to a somewhat lesser extent, with school organization and politics (r = .18). Their interests tend to correspond with those of lawyers (r = .22) and perhaps psychologists (r = .18) and to contrast with those of policemen (r = -.21) and accountants (r = -.20).

As was the case with Exchanging Information (Composite A), discussing problems with others before acting shows no consistent pattern of relationships with age, experience, or academic preparation.

Since those principals who demonstrated superior professional knowledge, superior performance on the other achievement and ability tests, and superior performance as measured by ratings by others were also those who more frequently planned discussions, there is reason to be cautious in simply interpreting discussing with others as a technique by which the less competent principals buttress their ability to make decisions. A more consistent interpretation is that planning to discuss problems with others implies a more complete recognition by the more competent principals of the complex nature of the in-basket problems.

The superiors' ratings reveal their view of the skills of principals who plan to discuss problems with others. Informal oral communication correlates with Composite B scores substantially (r = .38). Superiors also describe the principals scoring high on Composite B with higher ratings on understanding written instructions (r = .32), knowledge of teaching (r = .28), interest in his work (r = .25), formal oral communication skill (r = .24), ability to stick to the job (r = .19), and knowledge of administration (r = .20).

All those who provided a rating expressing their over-all impression of the principals favored principals who planned to discuss problems with others: superiors (r = .24), scorers (r = .54) and staff members (r = .19). Teachers did not show a definite positive preference (as indicated by their Consideration, Initiating Structure, or Teachers' Reaction scores) for those principals who plan more frequently for discussions.

In completing the checklist of attributes after scoring the in-basket responses, the scorers associated the following characteristics with principals who scored high on Composite B: urbane (r = .50), resourceful (r = .48), tactful (r = .38), painstaking (r = .36), forceful (r = .35), logical (r = .35), wordy (r = .34), and witty (r = .22).

In summary, the area of administrative performance identified as Discussing before Acting (Composite B) appears to be characteristic of the better prepared principals. This aspect of administrative performance has implications beyond simply obtaining assistance in decision making. To some degree, discussion of a problem with others may represent a first step toward final action, and thus may be viewed in part as a transition between analysis of the problem and carrying decisions into action.

Composite Score C: Complying with Suggestions Made by Others

Many of the problems that were included in the in-basket tests were handled by the principal's choosing to follow leads or suggestions that were made by someone else. About three-quarters of the items in the in-baskets contained "leads," i.e., suggestions about what the principal might do. Complying with leads of others constituted a third factor in the in-basket performance of the principals.

Composite Score C may be interpreted as a measure of compliance.

This interpretation is not entirely evident however, because in addition to in-basket scoring categories clearly pertaining to compliant behavior such as Follows Subordinates, Follows Superiors, and Follows Structure, the category scores, Concluding Decisions and Terminal Action, are positively loaded on Factor C (see Table VII-8). These latter scoring categories suggest decisive behavior with an overtone of aggressive rather than compliant behavior. Clarification is provided by contrast with the second-order Factor X, Preparation for Decision. Factor X is clearly defined by a continuum of behavior extending from the tentative preparation for decision on the one end to the decisive behavior of Concluding Decisions and Terminal Action on the other end. In view of the small negative loading of Factor C on the second order Factor X, Factor C can clearly be conceived as pertaining to compliance rather than decisiveness. Making Concluding Decisions and Taking Terminal Action are a necessary result of complying with leads suggested by others, but they are not the key to the interpretation of Factor C. Composite Score C, is therefore, regarded as a measure of the principals' complying with suggestions made by others.

The preferred mode of communication of the more compliant principals is writing (as shown in Chapter VII the loading of Communicates by Writing on Factor C is .45). There are also other indications that compliance is associated with a general tendency to avoid direct interactions; the in-basket scoring category Asks Outsiders, for example, correlates negatively ($r = -.20$) with Composite Score C. Interests and personality as measured by the Strong Vocational Interest Blank and the basic personality factors showed little or no association with Composite C.

Principals who scored high on Composite C showed a tendency to have difficulties in making an effective speech to the local PTA. Scores on Composite C are negatively related to effectiveness of introduction (r = -.20) and to efficiency (r = -.21).

With the exception of two negative associations, compliance as measured by a high Composite C score did not relate to other areas of the principals' performance. The two exceptions, however, indicate that the compliant principals in responding to the tasks of judging the work of probationary teachers tended not to be concerned with objectives (r = -.29), and evaluation (r = -.19). Lack of concern implied by these correlations could be attributed to lack of background from which to judge and evaluate, but such an interpretation is not supported by the correlations with either the administration and supervision (r = .05) and elementary education (r = .01), which are essentially unrelated to Composite C scores. Neither do the ability factors account for these negative relations with compliance. In fact, the more compliant principals tend to score higher on general reasoning (r = .23), and do slightly better on most of the other tests than the other principals. The compliant principals also show a slightly higher mastery of background materials, as indicated by positive correlations in all areas and particularly with the educational program (r = .20) and staff (r = .23).

Inspection of biographical information provides help in interpreting the observed negative relationships. Higher Composite C scores are earned by the younger principals (r = -.19) with less experience (r = -.19). Inexperience (perhaps even difficulty in interpersonal relationships with older and more experienced teachers) rather than lack of professional knowledge may be a factor in these principals' apparent lack of concern for objectives and evaluations.

Unlike the two preceding composite scores that have been discussed, for which a high performance was associated with general approval, the performance of high compliant principals is not strongly approved or disapproved. Superiors show neutrality or perhaps slight disapproval in their rating of compliant principals ($r = -.05$). Scorers of the in-baskets are not impressed particularly by compliance ($r = .13$). They indicate that the compliant principal is forceful ($r = .23$) but terse ($r = .22$). Staff impressions are neutral ($r = .02$). Teachers show also neutrality in their responses to the questionnaires ($r = .04$ with Teachers Reaction).

In general, compliance as a means of meeting educational administration problems is rather neutral in its over-all contribution to the impression the principal made on those who judged his behavior and is, perhaps, a response stemming from inexperience rather than lack of ability.

Composite Score D: Analyzing the Situation

Every administrative problem occurs in context with many related ones; thus each specific problem incident has the possibility of possessing broader ramifications than at first seem apparent. The 232 principals differed markedly in the degree to which they gave evidence of having seen the more pervasive implications of problems. A factor identified as Analyzing the Situation (Factor D) was found in the study of responses to in-basket items. Composite D scores are based on the sum of the two in-basket categories, Conceptual Analysis and Program Values. This score will be the point of reference in the discussion of this section. Once again it will be seen that those administrators who earned high scores on this composite score tended to score high on other variables.

The principals who scored high on Analyzing the Situation also tended to make use of human values in responding to problems ($r = .48$), gave recognition to subordinates for good work ($r = .32$), explained actions to subordinates ($r = .26$), and coordinated the activities of their associates and subordinates ($r = .22$). Analyzing the Situation thus contains a definite element of recognition and evaluation of the work of others mixed with a sensitivity to human reactions.

Principals who displayed the greater amounts of situational analysis in handling the in-basket problems were more concerned with child growth and development ($r = .28$), planning ($r = .27$), objectives ($r = .25$) and curriculum ($r = .20$) in responding to the films of the probationary teachers. In their responses to the tape-recorded educational problems, these principals were more concerned with pupil personnel ($r = .24$). Their concerns seemed to be centered in the area of the education program and its effect on children.

Principals scoring high on Composite D also scored higher on several of the categories that were used to evaluate the speech to the P.T.A. Their high speech scores were on organization ($r = .24$), voice control ($r = .21$), pronunciation ($r = .26$), and efficiency ($r = .20$).

Professional and general knowledge was positively related to high scores on situational analysis: administration and supervision (r = .32), elementary education (r = .32), social studies (r = .29). Relationships with the basic mental ability test scores include verbal knowledge (r = .32), ideational fluency (r = .25), and deductive reasoning (r = .22). Analyzing the Situation was related to achievement on the background information examination in the areas of community (r = .21) and school organization (r = .21).

The scorers described those principals earning high Composite D scores as relatively resourceful (r = .28), urbane (r = .26), witty (r = .24), and logical (r = .20). Scores on the basic factor personality factors did not add to this picture.

In terms of their interests as measured by the Strong Vocational Interest Blank, those principals displaying higher amounts of situational analysis were similar to psychologists (r = .22) and public administrators (r = .19). Total years of experience in educational work appears to have only a negligible relationship (r = .18) with situational analysis.

In their ratings of the principals, superiors indicated that those with high scores on Composite D, Analyzing the Situation, tended to have greater knowledge of teaching (r = .21) and of administration (r = .20) and ability to understand (r = .19), but the overall impression of the principals had little to do with Composite D (r = .10). In-basket scorers tended to prefer principals who earned high scores on Composite D (r = .29). On the other hand, neither the staff members' ratings nor the responses of teachers in their descriptions of the principals show substantial relationships with these scores.

In summary, those principals who earned higher scores on Analyzing the Situation appear to be those with a somewhat greater fund of knowledge and experience. Their interests and concerns tended to be directed to the conceptual aspects of education, particularly to the welfare of the individual.

Composite Score E: Maintaining Organizational Relationships

The school administrator works within a social organization and must maintain effective relationships with it. A most significant part of maintaining relationships with his organization is in his interactions with his superiors. Of almost equal importance, however, are his interactions with outsiders, particularly with parents and members of the community. Relationships with these latter individuals often involve matters of school policy or precedent. To involve superiors and outsiders in handling administrative problems is to recognize that such people have a legitimate interest in these problems and that it is wise to maintain good relationships with them.

From the results of the factor analysis and from correlations between Composite E and in-basket scores, comes a suggestion that Factor E contains an element of deference and respect. Decisions about problems are not delayed, postponed, or temporized (loading = -.38). The telephone is emphasized as a mode of communication (loading = .26). Superiors' opinions are sought (asks superiors, r = .45) and superiors are kept informed (informs superiors, r = .42). The principals refer to superiors (r = .30), and explain to superiors (r = .20). The same type of respectful or deferential behavior extends to outsiders but to a lesser degree (asks outsiders, r = .26; explains to outsiders, r = .15).

Respectful and deferential behavior to superiors and outsiders is not the only facet of maintaining organizational relationships. Principals scoring high on this composite also tend to give recognition for good work on the part of their subordinates (r = .27) and to back up their staff (r = .21). There is also present an element of concern for human values (human values, r = .22).

In their responses to the films showing their probationary teachers at work, the principals scoring high on Composite E displayed instructional awareness about the teacher's personality (r = .28), curriculum (r = .25), methods of instruction (r = .23), child growth and development (r = .21), and materials of instruction (r = .20). In the reactions to the special educational problems presented on tape, these high-scoring principals showed job performance values about employed personnel (r = .35), instruction and curriculum (r = .29), pupil personnel (r = .26), public relations (r = .21), and planning (r = .21). Their performance in group interaction was marked by a tendency to give positive information (r = .20).

In making their P.T.A. speeches, principals scoring high on Composite E made a more effective introduction (r = .21), showed better organization of the body of the speech (r = .19), and used words well: word usage (r = .20), clarity (r = .27), and pronunciation (r = .25).

The scores on the tests of professional and general knowledge show a definite positive relationship to Composite E scores: administration and supervision (r = .41), elementary education (r = .42), and social studies (r = .23). A large number of the basic mental ability tests are also positively correlated with maintaining organizational relationships: associational fluency (r = .36), number facility (r = .28 and r = .34), verbal knowledge (r = .33), word fluency (r = .33), inductive reasoning (r = .33), speed of closure (r = .29 and r = .20), general reasoning (r = .27), ideational fluency (r = .27), visualization (r = .27), flexibility of closure (r = .25), and deductive reasoning (r = .23). The principals who scored high on Composite E, Maintaining Organizational Relationships, also learned more of the background information in their study during the first day and one-half of the test week; staff (r = .32), community (r = .31), educational program (r = .30), funds and facilities (r = .23), and organization (r = .22).

The correlations of the in-basket scorers' checklist items with Composite E scores provides a description of their impressions of the high-scoring principals. These correlations were substantial for the descriptive attributes resourceful (r = .46), urbane (r = .38), wordy (r = .38), witty (r = .34), forceful (r = .32), logical (r = .31), tactful (r = .25), and painstaking (r = -.24). No additional information toward a personality description is provided by the basic personality factors.

The data provided by the Strong Vocational Interest Blank and by the score on background orientation categories give no readily interpretable information. All the correlations are small and generally best regarded as insignificant.

Principals scoring high on Composite E are described by their superiors as having relatively high oral communication skill (r = .20), and made favorable impressions on the in-basket test scorers (r = .47) and the members of the research staff (r = .22). Teacher reactions appeared to be neutral.

In summary, Maintaining Organizational Relationships (Factor E) is most characteristic of principals possessing superior professional knowledge and a wide range of basic abilities. High-scoring principals show concern with organizations and with the behavior of people related to them (e.g., employed personnel, teacher personality, child growth, etc.). Personality and interest scores do not seem to be related to high scores on Composite E.

Composite Score F: Organizing Work

Within the limited time the principals had to work, all the problems presented by the items in an in-basket could not be handled completely. Solution of many of the problems depended upon work that could be done only in the future. Future work is clearly implied in Composite B, Discussing before Acting. One attribute of the principal's work on in-basket items, especially of work to be done in the future, was the care with which he organized or, more specifically, scheduled his time. The 232 principals displayed marked differences in the degree to which they attended to the problem of organizing their work for the future. Some set the date and hour of many of their future activities; others showed virtually no scheduling of their future work and provided little evidence that they had concerned themselves with when they would do work they planned for the future.

Composite F was most clearly defined by the specific acts of scheduling work for some definite time on the same or following days. The behavior covered by Composite F, however, is larger than the specific acts of scheduling work and includes other aspects of an organized and orderly approach to the handling of administrative problems. As has been shown in Chapter VII, such activities as following a pre-established procedure and relating problems to background information are related. From the correlation of in-basket category scores with Composite F, the picture is rounded out by correlations with asking superiors or outsiders for information (r = .23 and r = .27), coordination (r = .21), and setting deadlines for the completion of work (r = .21).

Instructional awareness (r = .30), objectives (r = .25), teacher personality (r = .24), planning (r = .23), pupil motivation (r = .22), and pupil participation (r = .22) were expressed to a greater degree in their responses to the film by the principals earning higher Composite F scores. These principals also earned high scores on the job performance values: employed personnel (r = .28), planning (r = .28), and instruction and curriculum (r = .20). They were identified by members of their respective groups as being more effective in decision-making during the group interaction problems (r = .22).

Those principals who displayed more organizing of their work in their in-basket performance showed more organization in the speech they delivered to the P.T.A.: introduction (r = .28), organization (r = .27), conclusion (r = .23), and efficiency (r = .27). These principals also earned high scores on the speech categories, clarity (r = .22) and voice control (r = .24).

High scores on Composite F tended to be earned by the same principals who scored high on the test of professional and general knowledge: administration and supervision (r = .35), elementary education (r = .31), and social studies (r = .29). Several of the tests of basic mental abilities yielded scores with positive relationships with organization of work. These include number facility (r = .25 and r = .31), associational fluency (r = .28), inductive reasoning (r = .26), speed of closure (r = .25 and r = .18), verbal knowledge (r = .23), ideational fluency (r = .21), word fluency (r = .21) and general reasoning (r = .21). High scores on Composite F tended to be earned by the principals who scored high on the background achievement tests: community (r = .32), educational program (r = .28), staff (r = .25) and funds and facilities (r = .21).

The in-basket test scorers described those principals who earned high scores on Composite F by checking the qualities urbane (r = .37), resourceful (r = .33), painstaking (r = .31), logical (r = .28), tactful (r = .27), wordy (r = .27), and forceful (r = .24). There were no substantial correlations between scores on the basic personality factors and scores indicating that a principal stressed organization in his work.

In their study of the background material, those principals scoring high on Composite F showed a little more orientation toward pupil educational needs (r = .22) than those scoring low. They displayed no particular pattern of interests in completing the Strong Vocational Interest Blank. They were not characteristically either older or younger or more or less experienced than low-scoring principals.

In their ratings, superiors associated high oral communication skill (informal, r = .27; formal, r = .21), the ability to understand written communications (r = .22), and knowledge of administration (r = .20) with principals who scored high on Composite F. In-basket scorers considered those principals who scored higher on organization of their work to be better qualified for the position of principal of Whitman School (r = .34). Neither the teachers' descriptions of their principals' behavior nor the ratings made by members of the research staff, however, showed a substantial relationship with these scores.

Organizing work appears, in summary, to be a characteristic of those principals who possess superior professional knowledge, do better on tests of basic mental abilities, and profit most from a study of the background material. Superiors and the in-basket test scorers rated these principals higher. Patterns of personality variables or interest measures did not differentiate those principals who organized their work from those who did not.

Composite Score G: Responding to Outsiders

In his position as principal, Marion Smith was faced with constant pressures and demands of interested parents and other community members. This was a particularly prominent characteristic of the principal's job at Whitman School. Many of the items in the in-basket test were requests for special consideration, complaints, or invitations to participate in activities originating outside the school. A performance factor was found in the analysis of the in-basket scoring categories which is best interpreted as the degree of responsiveness shown by the principals to these outside pressures.

Composite G, Responding to Outsiders, was defined largely by the principals giving information to outsiders, following suggestions or leads from outsiders, and showing courtesy in situations involving outsiders both as individuals (loading = .31) and as groups, outside groups involved ($r = .48$).

The principals who earned higher scores on Composite G also were rated higher on the selection and use of words in making their speeches: word usage (r = .24), clarity (r = .23) and pronunciation (r = .22).

Principals showing a greater tendency to respond to outsiders also displayed greater concern for teacher personality (r = .24), child growth and development (r = .21) and curriculum (r = .20) in making observations about probationary teachers. These particular concerns pertain to characteristics of the probationary teachers' work that are likely to be most visible to parents.

In their reactions to the special educational problems (presented by tape-recordings), the principals scoring high on Composite G showed greater concern with instruction and curriculum (r = .31), pupil personnel (r = .27), employed personnel (r = .26), and planning (r = .20). They showed no particularly distinctive characteristic in the group interaction situation.

There was a small but significant relationship between scores on Composite G and the scores on the professional and general knowledge tests: administration and supervision (r = .28), elementary education (r = .26), social studies (r = .25). A small number of the basic mental ability test scores were also positively related to responding to outsiders. These included associational fluency (r = .28), number facility (r = .24 and r = .25), verbal knowledge (r = .23), flexibility of closure (r = .23), general reasoning (r = .23), visualization (r = .22) and deductive reasoning (r = .22). Principals scoring higher on Composite G tended to earn higher scores on the organization subsection of the achievement test which was administered after study of the background material (r = .20).

The in-basket scorers, in completing the checklist of personal qualities, described those principals who responded more to outsiders as wordy (r = .33), forceful (r = .32), urbane (r = .31), tactful (r = .27), courteous (r = .25), painstaking (r = .23), resourceful (r = .23), and logical (r = .20). No differences were found in the patterns of correlations of the basic personality factors with Composite G scores--all were approximately .00.

No distinctions were noted in the patterns of interest or orientation to the study of background material which could be associated with principals scoring higher on Composite G. Age and experience also show no relation to this score.

Although those principals who responded to outsiders were considered better principals for Whitman School by the in-basket scorers (r = .41), neither superiors' ratings, teachers' questionnaire reports, nor staff members' ratings were correlated with Composite G scores.

Responsiveness to outside pressures again seems to be more characteristic of the better prepared principals. This variable in administrative performance is independent of evaluation made by superiors, teachers, and staff members but was considered by the in-basket test scorers as a desirable quality for a principal of Whitman School. From the data available, it cannot be determined whether a community reputation as a "good principal" would relate to this factor in his work, but it seems reasonable to speculate that such might be the case.

Composite Score H: Directing the Work of Others

Directing the Work of Others is the factor in administrative behavior which corresponds most closely to the stereotype of the administrator. It is this factor to which reference is commonly made when the school administrator is described as a "leader." The area is a large one and includes not only the direction of the work of his teachers but also the direction of school-related work performed by outsiders.

A significant element in the direction of work of others is that of showing courtesy, courtesy to superiors ($r = .25$), and recognition, recognition for good work ($r = .25$), or consideration, explains to subordinates ($r = .28$). Other significant elements appearing in Directing the Work of Others are coordination ($r = .24$) and control, sets deadline ($r = .35$), and follow-up ($r = .18$). Directing the Work of Others requires immediate and direct responses to the in-basket problems. Principals scoring high on Composite H were those individuals who took positive and definite steps toward the solution of the problem during the test period.

If this area of administrative behavior is regarded as equivalent to the principal's functioning as a positive leader of the school-community, the relationships observed here seem understandable. Teachers under the principal and the principal's superiors may find attempts to direct their work objectionable on some occasions as well as desirable on others depending, of course, upon their own particular desire for direction. Leading has both positive and negative components, and the 232 principals can be expected to differ in the degree to which they were skillful in directing work, especially as far as interpersonal, face-to-face relationships may be involved. The in-basket scorers observed the written expressions of work direction as outsiders. They may have been less impressed with principals who scored high on directing work had they had the opportunity to observe other facets of this characteristic, such as its bearing on interpersonal relationships.

In their speeches to the P.T.A., principals scoring high on Composite H scored high on all speech categories, especially effectiveness of introduction (r = .32) and word usage (r = .29).

Those principals who were characterized in their in-basket work as tending to direct the work of others displayed concern about objectives (r = .24) and evaluation (r = .22) in their reactions to the probationary teachers. They showed no particular concern in their responses to the special educational problems. In their work with the group interaction problems, those principals scoring high on Factor H were noted by their fellow group members as more effective in presenting facts (r = .22), in making decisions (r = .20), and in having attempted to influence the group (r = .20).

Composite H scores are positively related to scores on the professional and general knowledge tests: administration and supervision (r = .28), elementary education (r = .22) and social studies (r = .26). Several of the basic mental abilities tests also show a positive relationship with Directing the Work of Others: word fluency (r = .29), inductive reasoning (r = .27), ideational fluency (r = .26), number facility (r = .22 and r = .25), speed of closure (r = .25 and r = .10), associational fluency (r = .24), and deductive reasoning (r = .20). High-scoring principals in this area also tended to score higher on the achievement test which was administered following study of the background materials--especially on the sections concerned with funds and facilities (r = .23), community (r = .23), and the educational program (r = .22).

In-basket scorers described the principals who did more Directing the Work of Others as forceful (r = .45), resourceful (r = .44), wordy (r = .44), urbane (r = .43), painstaking (r = .39), tactful (r = .30), courteous (r = .29), and witty (r = .21). The basic personality factors add no information about the principals who scored high on Composite H.

The principals who scored higher on Directing the Work of Others displayed greater orientation toward community concerns (r = .22) and the educational needs of pupils (r = .21) during their study of the background materials. Their interests, as measured by the Strong Vocational Interest Blank, however, did not differ appreciably from the interests of other principals. Age and/or experience did not appear to be factors associated with the amount of directing the work of others that the principals displayed in their in-basket work.

Directing the work of others showed only small correlations with superiors' ratings. These include, for example, knowledge of administration (r = .17) and understanding written communications (r = .17). Teachers' reactions were independent of the scores on Composite H, as were staff members' impressions of the principals at the end of the test week. In contrast, however, the in-basket test scorers gave favorable ratings to principals scoring high on Directing the Work of Others (r = .52).

It seems clear that Directing the Work of Others is associated with a forceful and positive approach to administrative problems (e.g., the scorers' ratings on the checklist of the attribute "forceful," and concerns with "objectives," "evaluation," "planning," etc.). Although forceful and positive action is involved, the relationship of Composite H scores with the professional knowledge test scores and the ability test scores suggest that persons of lower ability do not hesitate to direct the work of others.

Framework for Understanding Administrative Behavior

In the preceding sections of this chapter, eight composite scores based upon the factor analysis of performance on the in-basket tests have been described and their relations to other variables of the study presented. Each of the eight scores refers to a part of a total complex administrative performance. It is the purpose of this section to show how the eight areas can be viewed within an over-all framework.

The basic concepts upon which to build this framework are provided by the results of the second-order factor analysis reported in Chapter VII. The specific task here is to show how the two basic concepts suggested by that analysis can provide a way of viewing administrative performance as a unified, although complex, pattern of performance.

The two second-order factors were identified by the concepts, Preparation for Decision vs. Taking Final Decisions and Amount of Work Expended in Handling the Items. Both of the concepts need further discussion and development. As a first step, data presented in Table VII-10 and Table VII-11 have been rearranged in Table XII-5 to make clear the relationships among three distinguishable components of each of the eight factors in administrative performance. Two of these parts are Amount of Work (Factor Y) and Preparation for Decision vs. Taking Final Decisions (Factor X); the third corresponds to the unique content of the factor in question. It is important to clearly recognize that one of these components, Preparation for

TABLE XII-5. COMPOSITION OF EIGHT FACTORS IN ADMINISTRATIVE PERFORMANCE IN TERMS OF PERCENT OF COMMON FACTOR VARIANCE ACCOUNTED FOR BY TWO SECOND-ORDER FACTORS AND UNIQUE CONTENT

Factor	Percent Variance from Amount of Work (Factor Y)	Percent Variance from Preparation for Decision (Factor X)	Percent Variance from Unique Content
A Exchanging Information	29	44	27
B Discussing before Acting	12	50	38
C Complying with Suggestions	15	22 (negative)	63
D Analyzing the Situation	13	03	84
E Maintaining Relationships	40	00	60
F Organizing Work	.02	61	37
G Responding to Outsiders	.01	39 (negative)	60
H Directing Others	20	21	59

Decision vs. Taking Final Decisions, involved a bi-polar concept. On one end of a continuum defined by this factor is preparation for decision, on the other is decision and action. Unlike Amount of Work which ranges from no work done (0) to a large expenditure of effort (+), Preparation for Decision ranges from making many preparations for deciding in the future (+) through a zero point where this factor becomes irrelevant or non-existent to the opposite (-) of making preparation for decision which is simply taking final action on the spot.

From data presented in Table XII-5, it is possible to obtain a more complete understanding of each of the eight factors in performance than is possible by considering the factor as a whole. For example the total variance of Exchanging Information is made up of variance attributable to Preparation for Decision, and Amount of Work, as well as unique content. Maintaining Relationships involves even a larger amount of work (Factor Y) in addition to unique content, but is independent of Factor X. Analyzing the Situation is largely independent of both Amount of Work and Preparation for Decision.

The framework from which administrative behavior is to be viewed requires us to consider each course of action taken as a response which is generated by expenditure of energy (amount of work) in a decision-to-act process and which is expressed in a manner describable by reference to one or more of eight factors. In terms of this framework and using the data of Table XII-5, it is possible to obtain a relatively comprehensive understanding of the administrative performance of principals. The framework also makes it possible to understand some of the relationships between the eight factors in administrative performance and the measures of knowledge and ability.

The work of the principals in the in-basket test situations was largely the production of written material--letters, memos, reminders, etc. The test instructions were to "put everything in writing." Administrative performance, however, cannot be directly equated with number of words written. The eight factors in performance required differing amounts of writing. Maintaining Relationships, Exchanging Information, and Directing Others imposed higher requirements for written work than did other factors. These three factors were the ones in which higher correlations between composite scores and scores on the word fluency test were observed (r's for these three were .33, .41, and .29, as compared with .26, .08, .15, .21, and .20 for the remaining five). Although the relationship is not one-to-one, principals who possess greater fluency in the use of words do score higher in the areas of administrative performance in which high work output is required.

The other major aspect of the framework is the concept of Preparation for Decision vs. Taking Final Decisions (Factor X). Well-accepted theories of administration consider administration as decision-making.2/ The findings of this study add much to support such general theories of administration. The continuum between preparation for decision and taking final action refers to the stage of development an administrative decision has reached at any given

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2/ In particular note, Simon, Herbert. Administrative Behavior. New York: Macmillan, 1959. Griffiths, Daniel E. Administrative Theory. New York: Appleton-Century-Crofts, 1959.

time. Some principals characteristically behave in a way which places them near one end of the continuum, while others typically perform in a manner described by another part of the continuum. At what point on the continuum did each principal typically work in solving his problems? This question should not tempt one to equate good administration with taking final action on all items. Final disposal of many problems need not be an index of the quality of performance.

It is helpful in understanding this bi-polar concept to identify in a general way various stages of development of a decision toward final action, and to place some of the in-basket scoring categories along such a developmental continuum. The schema presented in Table XII-6 suggests six stages in the development of decision toward action and the scoring categories associated with each stage.

The concept of Preparation for Decision vs. Taking Final Decision (Factor X) is a generalization about an abstract property of administration. No implications are involved about how individuals proceed to make a decision toward solving an administrative problem. They may or may not go through each of the six stages suggested in Table XII-6. It is very likely, in fact, that in some instances some of the stages will be omitted entirely. An individual may decide and act upon a problem without showing evidence of having worked at any specific one of the stages.

It is possible, however, to describe a principal's administrative performance by reference to the stage of the decision to action process at which he worked on the average as he handled the items contained in an in-basket test. The principals differed in the number or proportion of problems which they handled at each stage

TABLE XII-6. STAGES OF DEVELOPMENT OF DECISION TOWARD ACTION

	Stage of Development	Scoring Category	Loadings on Factor X
Preparation	1. Recognizing a problem and the need to prepare to make a decision.	Arrives at a Procedure for Deciding	.69
↓		Requires Further Information	.63
	2. Preparing for clarification of the problem.	Work Scheduled for Same or Following Day	.61
		Discusses with Subordinates	.60
	3. Initiating work in preparation.	Asks for Information, Opinion, Advice or Permission from Subordinates	.56
		Takes Leading Action	.41
	4. Organizing and judging facts, opinions, and situations.	Conceptual Analysis	.24
		Makes Tentative or Definite Plans Only	.16
	5. Selecting alternatives.	Delays, or Postpones Decision, or Temporizes	.15
		Follows Lead by Superiors	.09
Action	6. Deciding and acting.	Follows Lead by Subordinates	-.10
		Concluding Decision	-.51
		Takes Terminal Action	-.62

between the early recognition of a need to prepare for decisions to taking final action on problems.

Evidence will be presented in the chapter to follow suggesting that those principals with more professional knowledge (of both teaching and administration) and those scoring higher on the basic ability tests acted in such a way as to remain at a relatively early stage in the development from decision to act. They apparently recognized many more of the problems as requiring more information, discussion, or analysis than could be brought to bear upon them in the short time available. They preferred to concern themselves during the test period with the organization of work for the future, planning discussions with others, or seeking more information.

In the next chapters of this report the framework suggested here will be developed in much more detail and will make more clearly the distinctions between the three components of each of the eight factors in administrative performance that have been identified.

CHAPTER XIII

COMPONENTS OF ADMINISTRATIVE PERFORMANCE

In the preceding chapter, the relationships between composite scores for eight factors in performance on the in-basket test problems and a large number of measures from other parts of the study were presented. The relationships between these composite scores and other variables were examined one at a time by the simple expedient of correlating the scores with the other variables. Such a procedure does not provide information about the basic components of the factors and their relationships to other measures, as they can be revealed by analysis of patterns of relationship among larger groups of variables.

It is necessary to distinguish between the composite scores discussed in the preceding chapter and the components of the factors which are to be the major concerns of this chapter. Composite scores, it will be recalled, were obtained by adding together category scores according to information about their loadings on the eight factors that were found in the factor analysis described in Chapter VII. Components of the performance factors, in contrast, are obtained by an analytic division of the variance of the factors into distinguishable parts.

Perhaps an analogy would be useful as a means of distinguishing between the composite factor scores used in the preceding chapter and the unique components of factors that are to be examined here. In elementary chemistry,1/ distinctions are made between mixtures.

1/ Reasoning by analogy is at best subject to severe limitations. Factor analysis and chemical analysis, of course, differ in many important respects. See Cronbach, Lee J. Essentials of Psychological Testing. New York: Harper & Brothers, 1949, pp. 208-209.

compounds, and basic chemical elements. A mixture is composed of a convenient collection of compounds and in-basket scoring categories, by analogy, may be considered mixtures. Most of our experience with the chemical world is with mixtures; the most purely constituted compounds are the result of more or less elaborate processes that are required to separate mixtures.

The factor analysis described in Chapter VII was a process by which the complicated mixtures embodied in each of the scoring categories were separated into more uniform factors or, by analogy, compounds. The composite factor scores were obtained by putting scoring categories together in a special new mixture by a means designed to concentrate a particular factor (compound). These composite scores are still mixtures but represent a concentration of a particular factor.

The unique components of a factor, by analogy, are elements. Each of the eight in-basket factors is either a three-element or two-element compound, composed of a unique element for each factor and one or two other elements that enter into each compound; these latter elements are the two second-order factors. Thus, with due allowance for the hazards of reasoning by analogy, there is little more reason to expect Composite Factor A and the unique element of Factor A to be alike than to expect to find the same qualities in salt (NaCl) and chlorine. In the analysis to be reported here, relationships of the unique elements of the factors to other variables of the study are expected to be different from the relationships of composite scores to these other variables.

It has been shown (Table XII-5) that each of the eight in-basket performance factors is complex in the sense that it is made up of one part which is unique to the specific factor and a second part which is shared by that factor and one or more of the remaining seven. This second part determines the correlation between the eight factors and has been divided into two second-order factors--Amount of Work and Preparation for Decision. The correlations between composite scores and other variables, discussed in the preceding chapter, involve all of this complexity, with the primary and second-order factors completely confounded.

Similar complexity characterizes, in varying degrees, the 165 other measures with which the eight composite scores were correlated. This complexity has been shown for some of these measures in other sections of this report (see Chapter XI for the analysis of the characteristics of superiors' ratings) and by previous research such as that on the Strong Vocational Interest Blank,2/ the ability tests,3/ and the personality factors. 4/

The analysis to be presented in this chapter will supplement that of Chapter XII by providing information about the relationships between the various components of the in-basket test factors and a selected set of the other measures. A second analysis (Appendix E) presents the results of a search for factors which can explain the relationships (correlations) ranging across in-basket scoring categories

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2/ Strong, Edward K. Vocational Interests of Men and Women. Stanford: University Press, 1943.

3/ Vernon, Philip E. The Structure of Human Abilities. London: Methuen, 1950.

4/ Cattell, Raymond B. Personality and Motivation Structure and Measurement. Yonkers-on-Hudson, N. Y.: World Book Company, 1957.

other performance measures, basic mental abilities, basic personality factors, superiors' ratings, etc. Both analyses have a common first step, determination of the factor composition of 120 variables selected from among all those available.

The 120 variables selected for this factor analysis consisted of 32 of the 68 in-basket scoring categories, 15 of the 16 basic mental abilities, 14 of the 16 basic personality factors, 12 of the 13 superiors' ratings, 11 of the 12 categories of instructional awareness, eight of the 10 group interaction categories, the six scores for the categories of job performance values, five Strong Vocational Interest Blank scores, the four scores from the professional and general knowledge tests, two of the background orientation categories, the three teachers' questionnaire scores, the background achievement test total score, the in-basket scorers' rating, the staff over-all rating, and five items of biographical information (total years in professional work, total years in administrative work, total years in preparation, age, and sex). The 120 variables selected are shown in the first column of Table XIII-2.

Twenty-six of the in-basket categories that were used in the original factor analysis of the in-basket scores are included. Twenty-two of these were used to obtain the composite scores reported in Chapter XII. The remaining six categories were selected because of special interest in their correlations with the eight in-basket composite scores as reported in the previous chapter. The specific nature of these interests will be discussed later in the presentation of the results of the analysis.

The Basic Factor Analysis

Intercorrelations among the 120 measures were obtained as the first step of the analysis. The resulting matrix is not reported here because of its large size and because many of the correlations among the measures already have been presented. The highest correlation of each measure with another of the 119 measures was used as the estimate of its communality. The characteristic roots and vectors of the 120x120 matrix were obtained and the loadings of the 120 measures on 28 orthogonal factors were determined.5/ The characteristic roots of these 28 factors are listed in Table XIII-1 in order of their magnitude. There is no obvious break in the rate of decrease of the size of roots to clearly suggest retaining any specific number of factors. Fifteen factors were retained for subsequent analysis; they accounted for most of the common factor variance. Table XIII-2 presents the orthogonal factor loadings of each of the 120 variables on the 15 factors that were retained.

Relationship from the Point of View of In-Basket Test Performance

Components of In-Basket Performance Factors

A question of great interest is that of the contribution of the components of the in-basket factors to the relationships between these factors and (1) the personal characteristics (i.e., abilities, personality, and background) of the principals, (2) their performance on the other tasks of the test week, and (3) evaluations or judgments

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5/ The computations were carried out by the Littauer Statistical Laboratory at Harvard University. Appreciation is expressed to Mr. Robert Hoods who planned and supervised the work.

TABLE XIII-1. CHARACTERISTIC ROOTS OF THE LARGEST 28 FACTORS

Factor Order	Root	Decrease
I	17.73	
II	6.67	11.06
III	6.43	.24
IV	4.07	2.36
V	3.58	.49
VI	3.48	.10
VII	3.04	.44
VIII	2.81	.23
IX	2.48	.33
X	2.40	.08
XI	1.95	.45
XII	1.75	.20
XIII	1.66	.09
XIV	1.53	.13
XV	1.40	.13
XVI	1.32	.08
XVII	1.27	.05
XVIII	1.16	.11
XIX	1.09	.07
XX	.99	.10
XXI	.95	.04
XXII	.90	.05
XXIII	.84	.06
XXIV	.79	.05
XXV	.78	.01
XXVI	.74	.04
XXVII	.68	.06
XXVIII	.65	.03

TABLE XIII-8. ORTHOGONAL FACTOR LOADINGS

No.	Variables	Factors I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	h^2
SCHOOL IN-BASKET SCORING CATEGORIES (BUREAU OF BUSINESS EXCLUDED)																	
1	Ask Subordinates	-.62	-.06	-.22	.17	-.03	-.10	-.01	-.02	-.02	-.08	.01	.03	.02	-.01	-.18	.52
2	Informs	-.50	.08	-.05	-.24	-.34	.09	.07	.01	.05	-.13	.07	-.00	-.06	-.16	.02	.49
3	Discusses with Subordinates	-.59	-.14	-.05	.10	-.06	-.07	-.27	-.54	-.04	-.04	-.10	.10	-.00	.05	.01	.78
4	Communicates Face-to-Face	-.67	-.02	.01	-.03	-.11	-.08	-.25	-.49	-.10	-.03	-.11	.06	-.02	.12	-.00	.82
5	Decides on Procedure	-.68	-.08	-.06	.10	-.06	-.10	-.25	-.44	.05	-.12	-.04	.00	.03	-.03	-.04	.77
6	Concluding Decision	-.08	.33	.15	-.58	-.22	.14	.00	.28	-.15	.04	-.00	.18	-.00	.07	.17	.69
7	Follows Subordinates	-.42	.14	.06	-.35	-.12	-.01	-.12	-.16	-.13	.00	-.17	.22	-.05	-.01	.13	.50
8	Terminal Action	.26	.28	.10	-.41	-.28	.16	.06	.45	.09	.06	.02	.10	.09	-.07	.23	.71
9	Program Values	-.33	-.05	-.11	.16	-.12	-.12	-.24	.10	-.33	.42	.08	.08	.00	-.19	.05	.59
10	Conceptual Analysis	-.45	-.11	-.13	.17	-.10	-.14	-.22	.09	-.29	.48	.10	.04	.06	-.15	.11	.69
11	Superiors Involved	-.27	.15	-.02	-.21	-.26	.26	.02	-.02	-.19	.04	.09	-.06	.03	.18	-.11	.37
12	Discusses with Superiors	-.50	-.05	-.08	-.03	-.16	.02	-.25	-.16	-.12	.04	-.01	.10	.06	.17	-.20	.47
13	Outsiders Involved	-.30	.09	-.08	-.22	-.25	-.01	-.32	-.02	-.16	.03	.02	.04	-.07	.31	-.15	.62
14	Relates to Other Materials	-.54	.09	-.12	-.08	-.12	.09	.08	-.04	.08	.03	.06	-.09	.06	.01	-.16	.40
15	Immediate Work Scheduled	-.48	-.02	.07	.06	.03	.02	-.10	-.44	-.03	-.06	-.07	-.20	-.07	-.00	-.03	.49
16	Intermediate Work Scheduled	-.42	-.05	-.12	.14	-.08	-.01	.01	-.29	.11	.03	.08	-.19	-.10	.04	-.06	.38
17	Informs Outsiders	-.37	.10	-.01	-.29	-.12	.12	-.12	.18	-.11	.09	.16	.03	-.05	.06	-.12	.37
18	Follows Outsiders	-.29	.12	-.02	-.41	-.26	-.02	-.30	.01	-.17	-.01	.02	.01	-.11	.16	.03	.50
19	Courtesy to Outsiders	-.27	.08	-.21	-.12	-.21	.00	-.17	.16	.03	.07	.12	-.02	.03	-.14	.03	.28
20	Leading Action	-.46	.12	-.12	.03	-.55	.05	-.05	.01	.38	-.13	.12	-.15	.10	-.11	.01	.77
21	Courtesy to Subordinates	-.34	.05	-.15	.15	-.45	.07	-.02	-.01	.39	-.16	.06	-.20	-.02	-.23	.08	.65
22	Directs	-.50	.19	-.11	-.08	-.45	.15	-.10	.03	.40	-.08	.03	-.13	.07	-.14	.06	.76
23	Careless	.18	-.09	-.21	-.06	-.24	.16	-.12	.12	-.03	-.02	.18	-.01	-.02	-.03	.03	.24
24	Delays	.02	.00	-.01	.33	.22	-.03	.10	-.13	.09	.00	-.19	-.06	-.08	-.14	.07	.27
25	Informality to Subordinates	-.30	.15	-.03	-.07	-.20	-.06	.03	-.03	.17	-.29	-.01	.12	.08	-.03	.14	.33
26	Number of Words	-.72	.07	-.16	-.24	-.28	.14	-.18	-.09	-.00	-.02	-.03	.01	.00	-.03	.01	.74
27	Recognition for Good Work	-.46	-.01	-.03	.07	-.14	-.12	-.09	-.00	-.09	.03	-.02	.17	.03	-.07	.20	.34
28	Prejudges	.16	.02	-.12	-.06	-.20	.03	-.22	.06	-.06	.09	.08	.10	.00	.08	.01	.17
29	Human Values	-.37	-.17	-.15	.16	-.03	-.13	-.25	-.03	-.09	.10	-.03	.04	-.07	-.12	-.11	.33
30	Controlled Delegation	.09	-.13	-.09	-.04	-.17	-.04	-.00	.16	.18	-.01	.08	.06	-.18	[illegible]	-.16	.23
31	Uncontrolled Delegation	.05	-.07	-.06	-.05	-.33	-.06	-.00	.20	.21	-.14	.01	.14	-.06	.24	-.11	.33
32	Sets Deadline	-.25	-.09	-.14	.04	-.18	.07	.06	-.01	.18	-.09	.06	-.04	.03	-.12	.00	.18
BASIC MENTAL ABILITIES																	
33	Reasoning	-.40	.46	.22	.04	.04	-.16	.04	.13	-.01	.17	.07	-.12	.07	-.11	-.06	.54
34	Four Letter Words	-.47	.14	-.09	.04	.11	.06	.15	.05	.11	-.15	-.01	-.05	.07	.15	.10	.36
35	Subtraction and Multiplication	-.55	.07	-.06	-.22	.26	.19	.14	.15	.14	-.10	-.07	-.18	.06	.17	.05	.62
36	Advanced Vocabulary	-.60	.10	-.26	.11	.09	-.22	.17	.25	-.22	-.05	-.05	.00	.07	.04	-.08	.65

TABLE XIII-2. ORTHOGONAL FACTOR LOADINGS (CONTD.)

No.	Variables	Factors															
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	h^2
BASIC MENTAL ABILITIES (Contd.)																	
37	Letter Groupings	-.59	.26	.08	-.05	.18	-.07	.09	.11	.12	-.12	.01	-.12	.04	.14	-.04	.55
38	First Names	-.20	.09	.17	-.00	.03	-.02	.27	-.07	.07	-.13	.10	-.02	.02	-.04	-.08	.19
39	Addition	-.60	.08	-.06	-.13	.25	.19	.09	.14	.08	-.06	-.07	-.24	.03	.20	.10	.63
40	Concealed Figures	-.50	.46	.16	-.05	.22	-.16	-.06	.05	.08	.14	-.10	-.04	.01	.01	-.05	.62
41	Mathematics Aptitude	-.49	.44	.11	-.14	.12	-.14	.07	.05	-.04	.15	-.15	-.17	.25	-.04	.07	.65
42	Paper Form Board	-.44	.42	.20	-.06	.15	-.22	-.10	.06	.14	.12	-.17	-.00	.06	-.00	-.14	.59
43	Gestalt Completion Test	-.33	.31	.36	-.01	.11	-.07	-.06	-.08	.04	-.10	-.02	.07	-.18	-.02	-.21	.45
44	Word Fluency	-.59	.16	-.02	.04	.13	.07	.08	.23	.11	-.09	.03	-.07	.07	.03	-.13	.51
45	Expressional Fluency	-.44	.18	.09	.01	.19	.12	.05	.07	.13	-.05	.03	-.10	-.01	.07	-.16	.35
46	Ideational Fluency	-.52	.12	-.05	.02	.10	.12	-.03	.06	.02	.01	-.06	-.07	.14	-.07	-.01	.35
47	Associational Fluency	-.37	.16	-.05	-.01	.08	-.08	.08	.04	.06	.06	.04	-.10	.08	.08	-.19	.44
BASIC PERSONALITY FACTORS																	
48	A. Friendly	-.02	-.19	.12	.08	-.06	.56	.13	-.04	-.23	-.29	-.03	-.17	.05	-.07	.11	.40
49	C. Emotional Stability	-.18	.11	.21	.13	.19	.12	-.59	.23	.06	-.13	-.26	-.05	.03	-.03	.11	.46
50	E. Dominance	-.06	.19	.22	.34	-.04	.13	.02	-.04	-.17	.12	.17	-.26	-.04	-.00	.13	.39
51	F. Enthusiastic	-.10	.13	.24	.18	-.02	.25	.07	-.12	-.17	-.17	.25	-.18	.13	-.03	.12	.36
52	G. Character Strength	.25	-.06	.09	-.20	.04	.20	-.01	-.06	.14	.25	-.10	-.13	-.07	-.13	-.11	.30
53	H. Adventurous	-.03	-.03	.27	.42	-.04	.57	-.25	.04	-.27	-.14	.07	-.19	.03	-.03	.01	.59
54	I. Emotionally Sensitive	-.20	-.18	-.36	-.08	.02	-.05	.15	.04	-.25	-.33	.04	.09	-.01	-.01	.02	.40
55	L. Suspicious	.14	.17	-.01	-.26	-.18	-.03	.30	-.24	-.02	.23	.18	-.05	-.03	-.13	-.03	.40
56	M. Non-conventional	-.14	-.13	-.38	.03	.00	-.14	.19	.06	-.10	-.17	.22	.09	-.02	-.04	-.04	.35
57	N. Sophistication	.09	.04	.23	.22	-.21	-.04	.09	.00	-.13	.14	.17	-.07	-.07	-.03	-.00	.24
58	O. Insecurity	.11	-.05	-.29	-.26	-.12	-.28	.45	-.33	.03	.22	.21	.03	-.01	.03	.07	.67
59	Q_2. Self-Sufficiency	-.11	.16	-.12	-.09	.00	-.20	.06	.10	.07	.09	-.10	.28	-.02	-.13	-.08	.24
60	Q_3. Will Control	.14	-.16	.17	.08	.05	.19	-.39	.21	.23	-.01	-.21	.08	-.16	-.06	-.14	.47
61	Q_4. Nervous Tension	.09	.11	-.13	-.20	-.08	-.25	.55	-.55	-.04	.25	.26	-.04	.05	.11	.00	.69
BACKGROUND ORIENTATION CATEGORIES																	
62	Pupil Education	-.33	.01	-.24	.16	.08	.10	-.02	-.02	.07	.04	.17	-.05	.16	.03	.10	.28
63	Community Concerns	-.16	.13	-.09	.08	-.18	-.10	-.04	.00	-.02	-.16	-.17	-.04	.08	-.10	.09	.19
STRONG VOCATIONAL INTEREST BLANK																	
64	Psychologist	-.38	.10	-.09	.35	.05	-.20	-.08	.26	-.09	-.16	.26	.19	-.13	.07	-.10	.57
65	Policeman	.33	.27	.40	.02	.03	-.04	-.33	-.04	.12	.31	.17	-.13	-.00	.03	.00	.62
66	Public Administration	-.17	.18	.25	.45	-.04	-.05	-.23	.13	-.13	-.00	.34	-.10	-.05	.03	.03	.54
67	City School Superintendent	-.22	-.16	-.07	.26	.02	.13	-.06	.21	-.36	-.26	.20	.00	-.07	-.01	-.02	.45
68	Lawyer	-.33	.01	-.22	.25	-.10	-.00	.26	.03	-.22	-.37	-.00	.11	.03	.03	.10	.51

TABLE XIII-2. ORTHOGONAL FACTOR LOADINGS (CONTD.)

No.	Variables	Factors															h^2
		I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	
CATEGORIES OF INSTRUCTIONAL AWARENESS																	
69	Objectives	-.42	-.20	-.37	.27	.20	.05	-.08	.05	.33	.17	.17	.13	.03	.05	-.05	.67
70	Evaluation	-.34	-.11	-.40	.16	.15	.09	-.04	.14	.28	.20	.18	-.06	.02	.12	-.03	.54
71	Planning	-.36	-.24	-.32	.13	.13	.14	-.15	-.00	.20	.19	.11	.18	-.01	.08	.12	.50
72	Curriculum	-.39	-.12	-.27	.02	.22	.22	-.15	.07	.18	.18	.25	.12	.03	-.02	.00	.51
73	Participation	-.42	-.05	-.19	-.11	.40	.20	.01	-.05	.03	.06	-.02	-.00	-.11	.02	.19	.48
74	Interest	-.44	-.05	-.17	-.13	.37	.25	.06	-.11	.05	.06	-.01	.17	-.13	-.04	.29	.59
75	Growth	-.45	-.11	-.15	.05	.17	.18	-.05	.05	.04	.10	.18	.11	.03	-.10	.09	.38
76	Methods	-.43	-.08	-.09	-.04	.17	.21	-.02	-.14	.09	.09	.21	.08	-.16	.03	.13	.40
77	Personality	-.45	.01	-.10	-.07	.17	.12	.04	-.10	-.01	-.13	.07	.01	-.00	.12	.09	.35
78	Classroom	-.18	.07	.10	-.09	.21	.19	-.03	-.17	.12	.07	.01	.06	-.10	-.04	.23	.26
79	Climate	-.30	-.15	-.11	-.20	.17	.22	.05	-.09	.01	.00	-.02	.08	-.12	-.04	.20	.31
CATEGORIES OF JOB PERFORMANCE VALUES																	
80	Instruction	-.50	-.09	-.10	-.20	.18	.20	.05	-.14	-.10	.07	-.01	-.23	-.20	-.17	-.11	.56
81	Pupils	-.41	-.22	-.06	-.38	.13	.13	-.00	.10	-.27	.05	.03	-.19	-.13	-.17	-.07	.57
82	Employees	-.42	-.10	.01	-.26	.01	.13	.01	-.07	-.18	.09	-.04	-.20	-.26	-.06	-.20	.48
83	Physical	-.13	-.07	.02	-.20	.04	.22	.10	.18	-.18	.05	.01	-.18	-.17	-.07	.00	.26
84	Structure	-.44	-.17	-.02	-.11	.09	.01	-.05	-.07	-.03	.06	-.04	-.08	-.17	-.21	-.11	.35
85	Public	-.24	-.03	-.04	-.26	.02	.15	.08	-.04	-.19	-.04	.11	-.13	-.30	-.03	-.03	.31
GROUP INTERACTION CATEGORIES																	
86	Frequency of Interaction	-.19	.13	.28	.32	-.17	.24	.23	-.10	-.06	.08	-.06	.01	-.05	.15	-.09	.43
87	Gives Positive Information	-.25	.05	.00	.08	.02	.26	.29	-.01	.06	.25	-.06	.12	.02	.20	.01	.35
88	Asks for Information	-.13	-.00	.02	.21	-.06	.06	.19	.09	-.01	.11	.12	-.02	-.01	.01	-.08	.15
89	Suggests New Procedures	-.17	.07	.16	.32	-.11	.15	.17	-.08	.03	.17	-.07	.04	-.07	.08	.02	.28
90	Presents Facts Effectively	-.34	-.09	.26	.29	-.30	.19	.23	.03	.03	.12	-.26	.16	-.12	.06	.01	.58
91	Makes Decisions Effectively	-.29	-.06	.15	.22	-.30	.24	.17	-.02	.04	.09	-.31	.16	-.22	.11	.04	.53
92	Amount of Talking	-.33	.05	.25	.32	-.19	.33	.23	.05	-.10	.22	-.14	.04	-.08	.12	.09	.58
93	Attempts to Influence	-.23	.07	.20	.24	-.23	.35	.18	.10	-.03	.18	-.13	.05	.01	.13	.16	.47
SUPERVISORS' RATINGS																	
94	Interest in Work	-.36	-.60	.34	-.02	-.04	-.16	.03	.07	.02	.02	.11	-.03	-.06	.03	.07	.65
95	Sticking to a Job	-.30	-.57	.40	-.01	-.13	-.11	.05	.10	.07	.09	.00	-.06	-.00	.02	.05	.64
96	Getting Along with Teachers	-.21	-.40	.52	-.17	.14	.00	-.09	-.02	-.01	.03	.07	-.01	.31	.18	.06	.68
97	Getting Along with Parents	-.17	-.45	.55	-.19	-.01	-.11	-.07	-.01	.02	.04	.12	-.06	.16	.16	-.02	.66
98	Getting Along with Supervisors	-.21	-.53	.47	-.23	.04	-.09	-.10	.10	.09	.00	.08	-.01	.02	.19	.03	.68
99	Knowledge of Administration	-.38	-.56	.25	.01	-.13	-.22	.16	.20	.04	.14	-.06	-.03	-.08	.05	.01	.68

TABLE XIII-2. ORTHOGONAL FACTOR LOADINGS (CONTD.)

No.	Variables	Factors I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	h^2
	SUPERVISORS' RATINGS (Contd.)																
100	Knowledge of Teaching	-.45	-.57	.15	.00	-.00	-.17	.04	.11	.06	-.10	-.03	.04	-.14	-.17	.07	.67
101	Rapport with Children	-.08	-.54	.46	-.05	.06	-.05	-.12	-.19	.05	-.09	.19	-.07	.24	.09	.12	.52
102	Written Communication	-.37	-.43	.18	-.09	-.02	-.53	.20	.20	.01	.04	-.02	-.04	-.05	-.16	.10	.59
103	Understanding	-.48	-.43	.57	-.01	-.05	-.27	.06	.10	.14	.02	-.02	.01	-.04	-.06	.06	.69
104	Oral Communication (Informal)	-.47	-.36	.39	-.03	-.12	-.21	.15	-.04	-.07	-.06	-.08	-.09	.06	-.12	-.02	.62
105	Over-All Impression	-.38	-.64	.46	-.06	-.05	-.15	.05	.12	.11	-.06	.03	.01	.01	.05	-.00	.83
	STAFF RATING																
106	Staff Members' Rating	-.37	.02	.22	.17	-.12	.03	.14	.01	-.04	.04	-.12	.11	-.16	.02	-.14	.33
	TEACHERS' QUESTIONNAIRE SCORES																
107	Consideration	-.10	-.03	.41	-.15	.04	.49	.03	-.09	-.17	-.06	.13	.29	.42	-.18	-.15	.82
108	Initiating Structure	-.03	-.32	-.03	.03	.00	.29	.18	-.07	.14	.16	-.13	.06	.06	-.25	-.28	.44
109	Teachers' Reaction	-.19	-.20	.31	-.06	.08	.46	.11	-.09	-.06	.03	.06	.33	.40	-.28	-.28	.85
	MEASURES OF PROFESSIONAL AND GENERAL KNOWLEDGE																
110	Administration and Supervision	-.78	.11	.02	.10	.06	-.16	.13	.07	-.06	.03	-.02	.13	.03	-.01	.03	.71
111	Elementary Education	-.77	.13	-.10	.06	.19	-.18	.09	.12	-.10	-.06	-.04	.16	.10	.06	-.06	.77
112	Social Studies	-.68	.29	-.04	.14	.04	-.27	.12	.14	-.16	-.08	.08	.10	-.06	-.04	.00	.73
113	Science and Mathematics	-.48	.45	.16	.04	.10	-.28	.01	.13	-.05	.13	-.14	-.06	.11	-.08	.04	.63
	BACKGROUND ACHIEVEMENT																
114	Total Background	-.65	.29	.05	-.08	-.01	-.12	.06	-.09	-.10	-.06	-.13	.03	.10	-.08	.13	.64
	IN-BASKET SCORERS' RATING																
115	Scorers' Rating	-.74	.16	-.02	-.04	-.17	-.04	-.04	-.02	.03	-.02	-.07	-.03	.03	-.08	.02	.62
	BIOGRAPHICAL INFORMATION																
116	Total Experience	.01	-.47	-.65	.03	-.12	-.01	-.03	.03	-.09	.13	-.23	-.19	.28	.07	.03	.87
117	Age	.08	-.42	-.64	.03	-.16	-.05	-.04	.04	-.15	.13	-.28	-.18	.29	.03	.00	.86
118	Administrative Experience	.02	-.26	-.50	.16	-.21	.04	.06	.13	-.15	.23	-.16	-.18	.19	.13	-.03	.59
119	Academic Preparation	-.11	.08	.08	.15	-.04	-.05	.01	-.01	.10	-.01	.14	.16	-.04	-.19	-.02	.15
120	Sex (Men = 1; Women = 2)	-.21	-.54	-.51	-.13	.20	.11	.03	.06	-.04	-.16	-.13	.03	.01	-.01	-.15	.73

made about their performance in their regular positions. As was indicated at the beginning of this chapter, these relationships can be assumed to be complex and not clearly revealed by inspection of simple correlations between pairs of variables. Insight into the nature of their complex relationships can be obtained, however, by examining the correlation of these measures with reference vectors that are determined by the oblique factor structure of the in-basket test performance. The data contained in Table XIII-2 were used as a base for an examination of these more detailed relationships.

Twenty-six of the 40 in-basket test scoring categories that were used in the analyses presented in Chapter VII were also included in the 120-variable factor analysis. The category scores, however, differed from those described in Chapter VII by being based on the principals' performances on only the three in-basket tests that were set in the Whitman School situation rather than on the entire set of four, the Bureau of Business In-Basket Test being omitted. A transformation matrix was computed[6] by which an orthogonal factor matrix composed of the first 10 factors in Table XIII-2 was rotated to an eight oblique factor matrix having a factor structure for the 26 common in-basket categories as near as possible (by a least-squares solution) to that obtained for these same categories in the original analysis.

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[6] Ledyard R Tucker suggested a procedure for computing the desired transformation matrix. This involved the following:

$$T_p = (F_J'F_J)^{-1} F_J'V_{Jp}$$

where T_p = the transformation matrix, F_J equals the matrix of the factor loadings for the 26 categories in the 120-variable analysis that are to overlap those from the original analysis, V_{Jp} equals the matrix of loadings for these 26 categories as given by the original analysis of 40 in-basket scoring categoric

The transformation was limited to the first 10 of the 15 factors from the 120-variable analysis, primarily to avoid possible difficulties in obtaining the inverse of the matrix required in the computations. One effect of this limitation was to reduce the common factor variance of each of the 26 category scores by an amount equal to the sum of the squares of loadings on the remaining smaller factors. Table XIII-3 shows the communality of each of the 26 category scores within each of three factor spaces: (1) the eight-factor space in the original analysis of 40 category scores, (2) the 10-factor space of the 120-variable analysis to which the transformation was applied, and (3) a more complete 15-factor space which will be used in the analysis reported in Appendix E.

Over-all, approximately 82 percent of the communality of the 26 category scores in the larger 15-factor space is included in the first 10. However, the categories vary considerably in the relative proportions of their communality which is present in the unused factors. For example, the communality of Informs Subordinates for the first 10 factors is 48 percent of that included in all 15, while approximately all of the variance of Decides on Procedure and Number of Words is in the first 10 factors.

The communality of most of the category scores was larger in the original analysis than in the 120-variable analysis. This is in part attributable to the fact that scores based on four in-basket tests are likely to be somewhat more reliable than those based on the three school tests. Perhaps of more significance, however, is the elimination of 14 of the 40 in-basket scoring categories that were used in the original analysis. The additional 14 categories probably introduced variance which did not appear in the 120-variable analysis but

TABLE XIII-3. COMMUNALITIES OF 26 IN-BASKET CATEGORIES IN THREE SPACES

In-Basket Category	Communalities		
	Original 8-Factor	10-Factor	15-Factor
Asks Subordinates	.68	.48	.52
Informs Subordinates	.57	.46	.49
Discusses with Subordinates	.86	.76	.78
Communicates Face-to-Face	.88	.79	.82
Decides on Procedure	.85	.77	.77
Concluding Decision	.87	.63	.69
Follows Subordinates	.68	.40	.50
Terminal Action	.82	.64	.71
Program Values	.77	.54	.59
Conceptual Analysis	.80	.64	.69
Superiors Involved	.46	.31	.37
Discusses with Superiors	.59	.39	.47
Outsiders Involved	.70	.49	.62
Relates to Other Materials	.53	.36	.40
Immediate Work Scheduled	.69	.45	.49
Intermediate Work Scheduled	.57	.32	.38
Informs Outsiders	.48	.32	.37
Follows Outsiders	.54	.46	.50
Courtesy to Outsiders	.43	.24	.28
Leading Action	.87	.71	.77
Courtesy to Subordinates	.57	.55	.65
Directs	.83	.71	.76
Careless	.22	.20	.24
Delays	.24	.20	.27
Informality to Subordinates	.31	.28	.33
Number of Words	.80	.74	.74
Total	16.61	12.84	14.20

which in the original 40-category analysis was shared with one or more of the remaining 26 categories.

Of interest also is the fact that four of the categories actually had larger communality in the 120-variable analysis than in the original one. These categories are (1) Courtesy to Subordinates, (2) Careless, (3) Delays and (4) Informality to Subordinates. In the original analysis these four categories were found to be relatively specific in the sense that the amount of their reliable variance, which was common with all 40 categories, was small. They also appear to be relatively specific in this larger 120-variable analysis.

The transformation matrix was first normalized by column and then employed to compute the correlation of each of the 120 variables with eight oblique reference vectors, each vector corresponding with one of the eight factors found in the original analysis of 40 in-basket scoring categories. These correlations provided a means of examining the basic relationships between the components of in-basket factors and the other measures included in the study. They are the *correlations* of the variables with these reference vectors and may be interpreted as proportional to the correlation of the variable with the unique part of the corresponding factor. For convenience these values will be referred to as estimated loadings on the unique component of the primary factors, or more succinctly as loadings on estimated factors.

These loadings on the estimated factors are not equivalent with estimates of loadings on the original factors which might have been obtained if a different and more conventional procedure for factor extension had been employed.[7] Somewhat different estimated loadings also would have been obtained if the largest 15 (or 20) rather than the largest 10 factors had been chosen for the analysis. These coefficients cannot be interpreted directly as correlation coefficients between the variables and the original factors. However, the pattern of relationship suggested by them can lead to specific hypotheses with respect to the probable nature of relationships between basic mental abilities, personality factors, interests, values, superiors' rating, etc. and the in-basket performance of the principals.

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[7] Dwyer, P. S. The determination of factor loadings of a given test from the known factor loadings of other tests. *Psychometrika*, 1937, *2*, pp. 173-178.

The normalized transformation matrix is given as Table XIII-4. The columns of this transformation matrix are identified by $\hat{A}$, $\hat{B}$...$\hat{H}$ to indicate that they are not identical with the corresponding factors previously discussed (Chapter VII) but are special reference vectors. The position of these reference vectors is determined not by the entire 120 variables but by the 26 in-basket scoring categories. The result of application of the transformation matrix will be presented after considering the correlation between the estimated factors.

Table XIII-5 presents the intercorrelations among the estimated factors $\hat{A}$ through $\hat{H}$.

The size and the pattern of the intercorrelations among the estimated factors is very similar to that obtained for original first-order factors (see Table VII-9). This finding suggested the desirability of including estimated second-order factors in the analyses.

The largest correlation with another of the seven factors was used as the estimate of each estimated factor's communality. Characteristic roots and vectors were computed and the factor loadings on the two largest factors determined. The loadings are presented in Table

TABLE XIII-4. NORMALIZED TRANSFORMATION MATRIX

Factor	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$
I	-.44	-.01	-.02	-.03	-.17	-.03	.06	.19
II	-.48	.30	.85	.33	-.20	.27	-.28	-.12
III	.11	.01	.17	.01	.07	-.25	-.52	-.26
IV	-.11	.01	-.23	.39	-.01	-.17	-.48	.10
V	.23	.10	-.12	-.27	-.18	.05	.25	-.60
VI	-.02	-.12	-.30	-.24	.71	.19	.12	.04
VII	.25	-.79	.16	.04	-.05	.45	-.55	-.39
VIII	.55	-.43	-.20	.03	.12	-.56	.04	-.03
IX	-.06	-.08	.00	-.18	-.54	.17	.20	.59
X	-.36	-.28	.16	.76	-.28	.51	.05	.14

TABLE XIII-5. INTERCORRELATIONS AMONG THE ESTIMATED FACTORS

Factor	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$
$\hat{A}$	1.00	.73	.11	.45	.08	.69	-.24	.59
$\hat{B}$	.73	1.00	-.26	.36	-.04	.70	-.45	.36
$\hat{C}$	.11	-.26	1.00	-.10	.42	-.25	.39	.26
$\hat{D}$	.45	.36	-.10	1.00	.15	.20	.19	.06
$\hat{E}$	.08	-.04	.42	.15	1.00	.03	.20	.25
$\hat{F}$	.69	.70	-.25	.20	.03	1.00	-.39	.40
$\hat{G}$	-.24	-.45	.39	.19	.20	-.39	1.00	-.32
$\hat{H}$	.59	.36	.26	.06	.25	.40	-.32	1.00

XIII-6, with the rotated factor loadings from the original analysis added for purposes of comparison.

Comparison of the factor loadings of the estimated second-order factors with those from the original analyses shows very close correspondence. The saturation of each of the 120 variables with these two estimated second-order factors ($\hat{X}$ and $\hat{Y}$) was determined and will be presented and discussed along with their loadings on the estimated primary factors ($\hat{A}$ through $\hat{H}$).

The Estimated Factor Loadings

In this section the factor matrix for the eight estimated factors and 26 in-basket variables of the study will be presented. It will be recalled that 26 of the 32 in-basket categories were used in the determination of the rotation of the reference axes. These categories are arranged in Table XIII-7 in order of their assignment to the composite factor scores A through H; to facilitate examination, the loadings for each composite are enclosed in a box. There is a total of 208 (26 x 8) loadings to be considered.

The loadings marked with asterisks were ±.20 or larger in the original oblique factor matrix. Of the 43 loadings in Table XIII-7 which are so marked, only six are below ±.15 in value. Only eight of the remaining 165 loadings, which were not as large as ±.20 in the original analyses, exceed ±.15 in Table XIII-7. Although the effect of reduction in the common factor variance discussed earlier is quite apparent in the size of the loadings in Table XIII-7, the match between the relative size of loadings on the factors is very satisfactory for all of the factors except E.

TABLE XIII-6. SECOND-ORDER ORTHOGONAL FACTOR MATRIX FOR THE ESTIMATED FACTORS

Factor	Estimated Factors					Original Factors		
	Unrotated		Rotated			Rotated		
	$\hat{X}$	$\hat{Y}$	$\hat{X}$	$\hat{Y}$	h^2	X	Y	h^2
Factor $\hat{A}$ or A	.85	.26	.64	.62	.79	.66	.54	.73
Factor $\hat{B}$ or B	.85	-.15	.83	.25	.75	.71	.34	.62
Factor $\hat{C}$ or C	-.16	.68	-.45	.54	.49	-.47	.38	.37
Factor $\hat{D}$ or D	.35	.19	.22	.33	.16	.17	.36	.16
Factor $\hat{E}$ or E	.04	.60	-.24	.55	.36	-.05	.63	.40
Factor $\hat{F}$ or F	.81	-.11	.78	.27	.68	.78	.16	.63
Factor $\hat{G}$ or G	-.46	.42	-.60	.17	.39	-.63	.08	.40
Factor $\hat{H}$ or H	.57	.36	.34	.58	.46	.46	.45	.41

TABLE XIII-7. LOADINGS OF 26 IN-BASKET SCORING CATEGORIES ON THE EIGHT PRIMARY ESTIMATED FACTORS

AND THE TWO ESTIMATED SECOND-ORDER FACTORS

In-Basket Scoring Category	Estimated Factor								Estimated Second-Order Factor	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	[illegible]	[illegible]
Asks Subordinates	20 •	05	-09	05	07	-04	-01	-04	45	34
Informs Subordinates	19 •	-04	13 •	-09	20 •	05	-01	07	16	53
Discusses with Subordinates	-06	43 •	-05	-01	07	12	07	06	60	23
Communicates Face-to-Face	-03	42 •	10	02	10	12	03	-01	63	36
Decides on Procedure	04	41 •	-02	-05	05	05	05	05	70	31
Concluding Decision	05	-06	37 •	-02	20	00	05	-10	-16	30
Follows Subordinates	02	21 •	26 •	-03	12	10	07	-10	15	30
Terminal Action	-02	-23 •	26 •	01	06	-04	04	14	-60	24
Program Values	-03	06	-01	30 •	07	-03	02	01	13	25
Conceptual Analysis	05	00	-07	51 •	05	00	05	02	21	28
Superiors Involved	00	-02	14	05	34 •	13	-02	-03	-03	38
Discusses with Superiors	05	23 •	-02	04	18 •	00	13	05	38	30
Outsiders Involved	05	27 •	11	06	19 •	-06	17 •	06	17	38
Relates to Other Materials	14	-06	10	03	20 •	16 •	-01	01	29	43
Immediate Work Scheduled	-01	20	04	-04	08	13 •	-06	-09	34	16
Intermediate Work Scheduled	-02	08	-01	07	-02	20 •	-03	09	38	03
Informs Outsiders	15 •	01	13	03	22 •	-08	13 •	-04	-04	41
Follows Outsiders	00	25 •	19	-02	17 •	-07	21 •	06	-05	43
Courtesy to Outsiders	04	04	04	08	04	-03	13 •	21 •	01	38
Leading Action	01	02	11	03	02	05	-07	43 •	29	33
Courtesy to Subordinates	01	00	-01	-01	06	01	-03	47 •	30	30
Directs	01	05	15 •	00	04	08	05	44 •	26	61
Careless	-06	-03	-17	-05	17	-08	20 •	26 •	-23	08
Delays	-06	00	-05	06	-14 •	06	-14	-07	22	-04
Informality to Subordinates	10 •	09	16	-13	06	-03	-07 •	09	13	29
Number of words	14	16 •	08 •	-23	26	00	17	11	34	03

The degree of correspondence between the original factors and the estimated ones was examined by use of a salient variable similarity index described by Cattell.[8/] The four categories with highest loadings for each factor were compared with the four highest loaded categories for the respective estimated factors, three of the four overlap for nine of the 10 factors. The chance probability of overlap of three of the four salient scoring categories is far less than one in a hundred. The overlap (one category) in the case of Factor E raises some doubt about the similarity of the original and the estimated Factor $\hat{E}$.

The purpose served by the 26 categories of Table XIII-7 in this analysis is that of establishing a frame of reference from which the basic relationships between administrative performance and the other measures of the study can be examined in detail. The frame of reference consisting of eight primary factors and two second-order factors that had previously been found to be adequate for describing the common variance of 40 categories in in-basket test performance is thus extended to other measures of the principal's ability, personality, past performance, and behavior in the simulated school.

The Estimated Factors and In-Basket Category Scores

Six of the in-basket category scores were not included in the original factor analysis reported in Chapter VII and, of course, were not involved in the estimation of the factors in this part of the study. They were included in the intercorrelations here, however, with the hope that they might contribute to the understanding of one or more of the 10 factors.

[8/] *Ibid.*, p. 818-825.

The correlations of these category scores with the composite scores reported in Table XII-3 suggests that Recognition for Good Work might be an important part of Exchanging Information (Factor A) or Discussing with Others before Acting (Factor B). The category Prejudges was included because of the possibility that the category of performance might add to the understanding of the second-order Factor Y, Preparation for Decision. The category Human Values seems also to be related to Analyzing the Situation (Factor D). It appeared that the delegation categories and Sets Deadline might illuminate the nature of Factor H, Directing the Work of Others.

The information yielded by this analysis of additional in-basket categories was not entirely in the directions expected. Recognition for Good Work appears to be an expression of the second-order factors (L= .28 and .31)9/ not of Exchanging Information (L = .13) or Discussing before Acting (L = .07). The correlations noted in the analysis with composite scores are apparently produced at the second-order level. This also appears to be the case for the relationship noted between Factor $\hat{D}$ and the category Human Values.

The two delegation category scores did appear with clear loadings on Factor H, as had been expected (L = .25 and .34). Delegation in the in-basket test performance of the principals is apparently best understood as a technique or means of giving work to others. The category Sets Deadline did not load as highly on Factor $\hat{H}$ (L = .19) as had been expected from the correlations with the composite score for Factor $\hat{H}$. The category Prejudges showed the expected negative loading on the second-order Factor $\hat{Y}$ (L = -.19) and also a small positive loading on Factor H (L = .24). The interpretation of performance described by Factor H as involving a certain amount of carelessness

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9/ In discussing the results of this section "L" will be used as an abbreviation for estimated factor loading.

and lack of perceptiveness will be developed in greater detail as relationships of this factor with other measures are presented.

The Estimated Factors and Mental Ability, Knowledge, and Achievement Tests

The second section of the estimated factor matrix to be discussed contains the loadings of the various tests of basic mental abilities, professional and general knowledge, and the background achievement score. Table XIII-8 presents this section of the factor matrix together with the saturation of each measure with the estimated second-order factors.

The loadings on the estimated factors of the ability, professional knowledge and achievement test scores will be considered factor by factor. These loadings provide insight into the nature of the factor components. The two second-order factors represent variance that is shared by the eight primary factors in the proportion indicated in Table XII-5. Of particular interest is that part of each factor which is not shared with the other seven oblique factors.

Table XIII-8 shows that the unique part of Factor $\hat{A}$, *Exchanging Information*, is clearly related to facility in the use of words and language. The substantial loadings on the tests in professional and general knowledge areas, especially knowledge of teaching (L = .42), may indicate that sharing information depends upon an adequate professional background. The interpretation of the high loadings on the two number facility tests (L = .43 and .40) is not obvious. These tests are usually regarded as measures of a number factor. "A Factorial Study of the Number Abilities" by Coombs,10/ however, suggests that the factors measured by the tests reflect a more general ability

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10/ Coombs, Clyde H. A Factorial Study of Number Ability, *Psychometrika*, 1941, 6, 161-189.

TABLE XIII-8. LOADINGS OF ABILITY, KNOWLEDGE, AND ACHIEVEMENT TESTS ON ESTIMATED IN-BASKET FACTORS

	Estimated First-Order Factors								Estimated Second-Order Factors	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	$\hat{X}$	$\hat{Y}$
Basic Mental Abilities										
Deduction	.02	.03	.48	.34	-.15	.07	-.31	-.22	.13	.28
Speed of Closure 1	.26	-.06	.07	-.10	.05	.06	-.07	-.16	.28	.27
Number Facility 1	.43	-.14	.00	-.25	.14	.09	.12	-.26	.21	.38
Verbal Knowledge	.39	-.14	.06	.15	.03	-.06	-.12	-.31	.24	.33
Induction	.31	.01	.23	-.05	-.04	.00	-.13	-.26	.30	.34
Associative Memory 1	.14	-.12	.14	-.08	-.01	.08	-.26	-.19	.16	.05
Number Facility 2	.40	-.10	.00	-.17	.17	.07	.09	-.26	.25	.40
Flexibility of Closure	.04	.16	.47	.22	-.22	.11	-.13	-.24	.24	.30
General Reasoning	.06	.04	.49	.24	-.13	.18	-.17	-.30	.16	.34
Visualization	.02	.19	.46	.21	-.27	.06	-.12	-.15	.22	.28
Speed of Closure 2	.04	.22	.33	.02	-.05	-.03	-.24	-.22	.22	.15
Word Fluency	.38	-.09	.05	-.04	.09	-.05	-.07	-.18	.26	.39
Expressional Fluency	.21	-.01	.11	-.05	.04	.06	-.07	-.19	.25	.25
Ideational Fluency	.20	.03	.04	.02	.12	.04	.01	-.13	.27	.34
Associational Fluency	.21	-.03	.17	.10	-.06	.12	-.07	-.15	.32	.35
Professional and General Knowledge										
Administration & Supervision	.36	-.09	.15	.18	.01	.04	-.23	-.28	.45	.41
Elementary Education	.42	-.01	.12	.07	.02	-.03	-.11	-.36	.41	.40
Social Studies	.30	.01	.28	.20	-.03	-.06	-.29	-.33	.33	.37
Science & Mathematics	.07	.09	.48	.33	-.21	.02	-.27	-.27	.19	.28
Background Achievement										
Total Background	.17	.12	.37	.09	.04	.05	-.29	-.32	.34	.38

in the manipulation of a symbolic system according to well learned rules. In this case the symbols may be words having well defined special meaning in professional education.

The unique part of Factor $\hat{B}$, Discussing with Others before Acting, does not appear to be a type of performance that depends upon the abilities and knowledges measured by the tests included in Table XIII-8. The loadings on Factor $\hat{B}$ are not large enough to warrant an attempt at interpretation.

It will be recalled that the composite score for the area Complying with Suggestions (Factor C) was noteworthy (Chapter XII) because it did not correlate significantly with most of the other measures. In this analysis, where it is possible to examine the unique part of Factor $\hat{C}$, a number of abilities appear to be involved. The abilities concerned are reasoning, especially general and deductive (L = .49 and .48), visualization (L = .46), and flexibility of closure (L = .47). Compliance also appears to be associated with knowledge in the general areas of science and mathematics (L = .48), but not necessarily to knowledge of administration (L = .15), or elementary education (L = .12). Following suggestions made by others, therefore, appears as a response associated with reasoning. Those principals who comply or follow suggestions made by others appear to do so in recognition of the merit of the suggestions. There is certainly no evidence in these data that would support an interpretation of the unique part of Factor C as a reflection of low general mental ability (no loading is negative). In fact, the relationship of the unique part of this factor with the total score on the background achievement test (L = .37) suggests the opposite interpretation, i.e., that the principal who solves his in-basket problems by following suggestions is using superior ability, perhaps to compensate for lack of professional knowledge.

Factor $\hat{D}$, Analyzing the Situation, like Factor $\hat{C}$ shows positive relationships with the abilities tests measuring general and deductive reasoning (L = .24 and .34). This is support for the interpretation of Factor $\hat{D}$ as a type of broad analysis of administrative problems.

The test scores show a mixed pattern of very small positive and a few small negative loadings on Factor $\hat{E}$, Maintaining Organizational Relationships. The small negative loadings tend to be on those tests that were positively loaded for Factors $\hat{C}$ and $\hat{D}$. The general lack of strong relationships is even more true for Factor $\hat{F}$. Apparently the abilities and knowledge measured by the tests have little relationship to the unique parts of these two factors.

The ability test scores are generally negatively loaded on both Factors $\hat{G}$ and $\hat{H}$. The pattern of loadings on the two factors is very similar. The tests of professional and general knowledge and general reasoning have the higher negative values (loadings range between -.11 and -.36). There is a definite suggestion that low general ability and lack of knowledge may be an element in the tendency of principals to be responsive to outsiders (Factor G) and to be directive in their work with others (Factor H).

The loadings of the ability, professional, and achievement tests are positive on both second-order factors, Preparation for Decision ($\hat{X}$) and Amount of Work ($\hat{Y}$). The pattern of loadings on the two factors is rather similar but tends to be somewhat larger for Factor $\hat{Y}$. The exceptions are the tests measuring speed of closure, associative memory, administration and supervision, and elementary education, but the differences are very small between the two factors. On the other hand, several tests show reasonably distinct differences in loadings that are higher on Factor $\hat{Y}$ than on Factor $\hat{X}$. These include tests of verbal knowledge (L = .24 and .33), word fluency (L = .26 and .39), deductive reasoning (L = .13 and .28), general reasoning (L = .16 and .34), and number facility (L = .21, .25 and .38, .40). In terms of abilities associated with the factors, *Amount of Work* appears to entail a fluency, speed and facility in the manipulation (production) of symbols. *Preparation for Decision* is perhaps more closely identified with ability to see order and relationships in loosely organized materials.

The Estimated Factors and Personality, Orientation, and Interest Tests

The third panel of scores from the larger group of measures to be considered is presented in Table XIII-9. Included in Table XIII-9 are three types of variables: 15 basic personality factors, two background orientation categories, and five *Strong Vocational Interest Blank* scores.

It will be recalled that the basic personality factor scores did not show interpretable relationships with many of the composite scores in the analysis presented in Chapter XII. The analysis reported here, however, contains relationships with the unique parts of factors in in-basket test performances which add substantially to the understanding of the principals' performance in the in-basket test situations.

The discussion of these relationships with the basic personality factor scores is based on the research literature which is available concerning the factors measured by the 16 personality factor questionnaire.[11] The reader who may wish to check, reconsider, or further explore the interpretations presented here is referred to the extensive body of previous research in which the 16 personality factor

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[11] Cattell, Raymond B., *op. cit.*

TABLE XIII-9. LOADINGS OF PERSONALITY, ORIENTATION, AND INTEREST TESTS ON ESTIMATED IN-BASKET FACTORS

Test Score	Estimated First-Order Factors								Estimated Second-Order Factors	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	$\hat{X}$	$\hat{Y}$
Basic Personality Factor										
A. Friendly	.21	-.09	-.29	-.28	.51	-.14	-.15	-.18	.01	-.01
C. Emotional Stability	.15	.28	-.09	-.10	.12	-.36	.08	-.03	.07	.12
E. Dominance	-.14	.03	.12	.30	.14	.03	-.37	-.12	.09	-.03
F. Enthusiastic	.01	.07	.05	-.04	.29	-.03	-.32	-.21	.11	.00
G. Character Strength	-.16	-.09	-.01	.00	-.04	.21	.16	.11	-.16	-.09
H. Adventurous	.03	.19	-.26	.01	.50	-.33	-.23	-.07	.08	-.02
I. Emotionally Sensitive	.34	-.07	-.21	-.28	.22	-.11	.12	-.19	.05	.10
L. Suspicious	-.30	-.16	.36	.18	-.14	.45	-.13	.00	-.13	-.02
M. Non-Conventional	.23	-.15	-.16	-.11	.02	-.02	.08	-.07	.07	.05
N. Sophistication	-.12	-.10	.09	.30	.02	-.02	-.35	-.01	-.03	-.08
O. Insecurity	-.21	-.28	.25	.14	-.35	.55	-.01	.03	.00	-.11
Q_2 Self-Sufficiency	.01	-.05	.20	.13	-.21	.09	.02	.00	-.01	.12
Q_3 Will Control	.04	-.14	-.29	-.14	.07	-.32	.22	.26	-.07	-.02
Q_4 Nervous Tension	-.21	-.30	.39	.22	-.30	.60	-.22	-.14	.04	-.10
Background Orientation Categories										
Pupil Education	.08	.01	-.10	.04	.04	.10	.09	.03	.27	.17
Community Concerns	.00	.11	.10	.03	.02	-.09	-.08	.06	.09	.16

TABLE XIII-9. (Cont'd)

Test Score	Estimated First-Order Factors								Estimated Second-Order Factors	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	$\hat{X}$	$\hat{Y}$
Strong Vocational Interest Blank										
Psychologist	.27	.06	-.04	.12	.02	-.32	-.16	-.10	.22	.17
Policeman	-.45	.27	.30	.30	-.26	.01	-.06	.15	-.17	-.18
Public Administration	-.02	.20	.06	.28	.07	-.29	-.32	-.04	.15	.04
City School Superintendent	.36	.00	-.34	-.11	.45	-.38	-.08	-.21	.06	.09
Lawyer	.29	-.10	-.09	-.10	.26	-.11	-.26	-.21	.21	.14

questionnaire has been employed.

The majority of the personality factors involved are bi-polar; that is, they have meaning both in a positive and a negative sense. Both positive and negative loadings in Table XIII-9 are of equal importance and both add to the understanding of relationships.

Factor $\hat{A}$ has been identified as Exchanging Information. Personality characteristics that appear to be involved in this type of administrative activity include (A) friendliness, agreeableness, and social responsiveness (L = .21); (C) emotional sensitivity or, perhaps, tender-mindedness (L = .34); (L) understanding, trustfulness, and calmness (L = -.30); (M) individualism (L = .23); (O) self-confidence (L = ∓.21); and(Q_4) freedom from fear and anxiety (L = -.21). Interest patterns as revealed by the five Strong Vocational Interest Blank scores show similarity with those of city school superintendent (L = .36), lawyers (L = .29) and psychologists (L = .27), but definitely not of policemen (L = -.45). The total picture is that of readiness to relate with others in an accepting and non-critical manner.

Factor $\hat{B}$ entails discussing problems with others before other administrative action is taken. Personality characteristics related to this factor are (C) emotional stability (i.e., not easily annoyed or frustrated) (L = .28); (O) self-confidence (L = .28); and (Q_4) freedom from fear or anxiety (L = -.30). There are some small indications of similarity in interest to policemen (L = .27) and public administrators (L = .20). The total impression is that of a tendency to resist becoming excited or pressured into taking premature action by the mere existence of a problem.

Factor $\hat{C}$ has been identified as Complying with Suggestions Made by Others; as has been indicated in the discussion of ability measures the factor seems to imply reasoned or deliberate decisions to follow suggestions rather than weak responses. This insight is supported and further developed by the relationship between Factor $\hat{C}$ and the basic personality factors. Personality characteristics related to Factor $\hat{C}$ include: (A) aloof steadiness of purposes (L = -.29); (H) careful considerate seriousness (L = -.26); (I) independent logical practicality (L = -.21); (L) skeptical suspiciousness (L = .36); (Q_2) independence and self-sufficiency (L = .20); but also (O) insecurity or feeling of inadequateness (L = .25); (Q_3) willingness to give in or compromise (L = -.29); and (Q_4) considerable anxiety in response to pressures (L = .39). It would seem unlikely that a person possessing characteristics as indicated here would comply with a suggestion before he had given it close scrutiny, but he could and would comply if the suggestion passed the test of his reasoning.

Analyzing the Situation (Factor D) is indicative of a perception of the long-range or broad ramifications of specific administrative problems. Personality characteristics associated with high performance in this area include: (A) aloof and subjective steadiness of purpose (L = -.28); (E) superior aggressiveness or dominance (L = .30); (I) tough practical independence (L = -.28); (N) insightful, shrewd thinking (dislike for nonsense) (L = .30); and (Q_4) some discontentment or anxiety related to feeling of pressure or conflict (L = .22). Interests show more similarity with policemen (L = .30) or public administration (L = .28) than city school superintendents (L = -.11). The general impression created by this constellation of personality characteristics is that of an individual with the inner capacity and disposition to take a searching look at a problem and let the "chips fall where they may."

Factor $\hat{E}$, which was interpreted as Maintaining Organizational Relationships in the original analysis, was not as well estimated in this analysis as were the other seven factors.. This factor perhaps should be viewed as a tendency or need to involve others, especially superiors, in making decisions. Personality characteristics that relate to this factor are: (A) friendly sociable responsiveness (L = .51); (F) lively, impulsive enthusiasm (L = .29); (H) bold, warm-hearted spontaneity (L = .50); (I) kind, dependent, tender-mindedness (L = .22) coupled with (O) accepting self-confidence (L = -.35); (Q_2) lack of resolution or lack of ability to make up one's mind (L = -.21); and (Q) freedom from worry and anxiety (L = -.30). Interests show some similarity to those of city school superintendents (L = .45) or lawyers (L = .26) but not policemen (L = -.26). The general picture is that of a gay, agreeable, and spontaneous individual who functions in an organization without serious personal application to the content of administrative problems.

Factor $\hat{F}$, Organizing Work, is defined to a large extent by the degree to which principals scheduled work they planned to do in the future. The emphasis is upon establishing order in work to be done. The personality characteristics associated with this factor clearly indicate this need for orderliness. They include (C) lack of tolerance for frustration (L = -.36); (G) conscientiousness, a feeling of sense of duty or responsibility (L = .21); (H) a feeling of a need to be serious, careful, and considerate (L = -.33); (L) suspicious distrust (L = .45); (O) insecurity, worrying (L = .55); (Q_3) being easily rattled or excited (L = -.32); and (Q_4) nervous anxiety (L = .60). Interests are not similar to those of psychologists (L = -.32), public administrators (L = -.29), or city school superintendents (L = -.38).

It appears that the in-basket tests for these principals present a threatening, disorderly set of problems in which some order must be introduced by a rather compulsive preparation of a schedule of work.

The relationship of the personality factors with Factor $\hat{G}$, *Responding to Outsiders*, helps clarify the nature of this factor in the in-basket work. It is necessary, however, to recall the general lack of relationship between Factor $\hat{G}$ and the ability tests and also to anticipate a finding to be discussed later.

Table XIII-10 will show a positive association between Factor $\hat{G}$ and six of the categories of instructional awareness. Concerns or awareness expressed in evaluating the probationary teachers include the categories Objectives, Evaluation, Planning and Continuity, Curriculum, Pupil Participation, and Pupil Motivation. The finding suggests that responsiveness to outsiders may entail a deep interest in the primary purposes of education. It should be noted that these are *concerns* with such purposes or awareness of them, but not necessarily skills in achieving them.

Returning to the personality characteristics related to Factor $\hat{G}$, Table XIII-9, indicates that the following are associated with *Responding to Outsiders*: (E) submissiveness, meekness, modesty, obedience ($L = -.37$); (F) desurgency, indicating perhaps a sober commitment to long-term goals involving a subdued or even gloomy prospect for achieving satisfaction through their attainment ($L = -.32$); (H) shyness and timidity ($L = -.23$); (N) simple sentimental naivete ($L = -.35$); (Q_3) persistence and stable interests ($L = .22$); and (Q_4) composed non-anxious response to pressure ($L = -.22$). *Strong Vocational Interest Blank* scores are indicative of a lack of similarity in interest with those of public administrators (L = -.32) or lawyers (L = -.26).

If we consider together (1) the pattern of personality factors and interests noted above, (2) the concern with the purposes of education, and (3) the fact that Responding to Outsiders is most characteristic of older women principals with longer backgrounds of experience in education (see Table XIII-11), the nature of responsiveness to outsiders becomes more apparent. The simplest and perhaps overstated explanation is that such responsiveness is a result of a deep-seated and long commitment or dedication to the basic objectives of professional education.

Directing the Work of Others (Factor $\hat{H}$) shows a small relationship with two of the personality factors. These give some indication that directing the work of others in performing in-basket tasks is associated with (F) sober desurgency or retiring from immediately satisfying goals (L = -.21) and (Q_3) persistent self-control or will power (L = .26). This factor is not illuminated particularly by its relationship to personality scores. The two small negative loadings on the Strong Vocational Interest Blank score for city school superintendents and lawyer do not add to the picture.

The loading of the scores for the basic personality factors on both of the second-order factors are small and uninterpretable. The only loadings of possible interest are the background orientation score Pupil Education (L = .27) and the Strong Vocational Interest Blank score for psychologist (L = .22) and lawyer (L = -.21) on Factor X, Preparation for Decision. These loadings suggest that the principals who preferred to work at the preparation stages in the decision process are more oriented toward, or are interested in people, their problems, and their needs than are principals who more often take final action.

The Estimated Factors and Professional Concerns

The fourth section of the 8x120 factor matrix consists of two sets of measures. These scores were developed to describe the principals' work on two special tasks that were administered on Thursday afternoon of the test week. The first of the tasks was to prepare the probationary report and outline an interview for each of three teachers after visiting their respective classrooms (via a set of three 15-minut kinescopes). The second task involved participation in five conferences at which special educational problems were under consideration (via tape recordings). The responses of the principals to both of these tasks were scored to reflect the degree of concern or awareness expressed in a number of defined areas. Table XIII-10 presents the loadings of these two sets of measures on each of the eight estimated factors and on the second-order factors $\hat{X}$ and $\hat{Y}$.

The two category scores Instruction and Pupils, for the job performance values expressed by principals show moderate loadings on Factor $\hat{A}$ ($L = .39$ and $.41$). Fourteen of the remaining 15 scores have small positive loadings on this factor. The over-all pattern of these loadings suggests that Exchanging Information and a sensitivity to the educational welfare of children go together. This is consistent with the general sensitivity and social responsiveness that was noted in the discussion of the relationship between Exchanging Information and the personality scores.

TABLE XIII-10. LOADINGS OF PROFESSIONAL CONCERNS ON ESTIMATED IN-BASKET FACTORS

Professional Concerns	Estimated First-Order Factors								Estimated Second-Order Factors	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	$\hat{X}$	$\hat{Y}$
Categories of Instructional Awareness										
Objectives	.18	-.07	-.32	.05	-.13	.10	.27	.20	.44	.17
Evaluation	.15	-.13	-.24	.08	-.10	.12	.29	.19	.27	.21
Planning	.13	-.02	-.33	.01	.01	.10	.33	.19	.34	.19
Curriculum	.17	-.01	-.24	-.03	.06	.11	.35	.07	.27	.25
Participation	.24	-.01	-.13	-.16	.10	.19	.26	-.24	.27	.17
Interest	.22	-.03	-.11	-.17	.13	.25	.23	-.24	.30	.19
Growth	.24	-.05	-.20	-.03	.15	.06	.16	-.07	.29	.25
Methods	.14	.02	-.11	-.08	.12	.19	.16	-.07	.34	.23
Personality	.24	.06	-.03	-.19	.16	.09	.07	-.20	.32	.25
Classroom	-.02	.09	.06	-.08	.02	.20	.06	-.10	.19	.06
Climate	.21	-.06	-.15	-.21	.18	.16	.21	-.13	.17	.18
Categories of Job Performance Values										
Instruction	.39	-.14	-.13	-.11	.27	.05	.17	-.25	.15	.36
Pupils	.41	-.11	-.17	-.18	.33	-.02	.25	-.30	.04	.33
Employees	.21	-.03	-.02	-.06	.25	.11	.10	-.20	.16	.32
Physical	.24	-.20	-.09	-.08	.29	.00	.06	-.20	-.13	.18
Structure	.23	.02	-.11	-.07	.10	.04	.13	-.11	.29	.24
Public	.17	-.04	.00	-.14	.25	.09	.08	-.21	.02	.21

The relationships between the 17 measures of Table XIII-10 and Factor $\hat{B}$, Discussing before Acting, are small and inconsistent with respect to direction. They offer little possibility of meaningful interpretation.

The loadings of these measures on Factor $\hat{C}$, Complying with Suggestions, tend to be negative and moderate in size for the scores Planning (L = -.33) Objectives (L = -.32), Evaluation (L = -.24) and Curriculum (L = -.24). It will be recalled that in the analysis of the 12 categories of instructional awareness that describe the performance of principals' in their evaluation of probationary teachers, a factor was identified as Concern for Program (see Chapter IX). This factor was defined by the high loadings of these same four categories. The in-basket Factor C, therefore, appears to be negatively oriented with respect to concern for the educational program. In other words, it appears that concern with an educational program may act as a source of resistance to suggestions made by others. The evidence suggests that resistance to suggestion stems from concern with the educational program rather than from professional knowledge (see Table XIII-8).

There are no interpretable loadings of the 17 performance measures on Factor $\hat{D}$, Analyzing the Situation.

The loadings of these scores are generally positive for Factor $\hat{E}$, Maintaining Organizational Relationships, but tend to be smaller for the categories of instructional awareness than for the categories of job performance values. The problems presented in the later situation tend to involve superiors and outsiders in addition to teachers and pupils which may account for their larger loadings on Factor $\hat{E}$.

Maintaining Organizational Relationships may reflect instructional awareness or job performance values to the extent that these concerns have ramifications that involve relationships with superiors or outsiders.

The categories of professional concerns show no particular relationship with Factor $\hat{F}$ except that signs are generally positive. The small positive loading (L = .25) of the score Interest on this factor is not readily interpretable.

Each of the 17 measures in Table XIII-10 loads positively on Factor $\hat{G}$, Responding to Outsiders. The larger loadings are for scores reflecting concerns for the educational program [Objective (L = .27), Evaluation (L = .29), Planning (L = .33), and Curriculum (L = .35), and concern for pupil reactions (Participation (L = .26) and Interest) (L = .23)]. The loading on scores related to educational program has already been discussed along with the basic personality factors (see Chapter IX). Concern with the reactions of pupils to teaching is also consistent with the interpretation of Responding to Outsiders as an expression of a dedication to professional education.

With the exception of the four measures that define concern with the educational program, the professional concerns scores are all negatively loaded on Factor $\hat{H}$, Directing the Work of Others. The shift in sign at this point in the table and the tendency for the larger negative loading to be on scores which reflect concern with the human side of the problems [i.e., Pupils (L = -.30), Participation (L = -.24), Interest (L = -.24), Employees (L = -.20), and Personality (L = -.20)] suggests that Directing Others may be prompted by a narrow concern with achieving objectives that subordinates and minimizes consideration of the reactions of others.

The nature of the relationships between personal characteristics of the principals and the two second-order factors is further clarified by the loadings shown in Table XIII-10. The relatively high loading on the categories relating to educational objectives (L = .44) may be a key to understanding the motivation for the emphasis upon preparing for decisions. This evidence of a greater concern with objectives can be coupled with the evidence presented earlier suggesting that principals who chose to refrain from taking final action on the in-basket problems possessed superior professional knowledge. The combination of greater concern with objective and superior professional knowledge provides an explanation of the hesitancy of certain principals to take final action, in view of the limitations of time and information which were inherent in the in-basket tests situations.

Factors $\hat{X}$ and $\hat{Y}$ are differentiated to some degree by the pattern of loadings of the two sets of measures. Verbal facility, which characterizes Factor $\hat{Y}$, may be more important to the total task of comprehending and responding to the tape-recorded problems than of the task of viewing a film and completing a moderately structured probationary report form. This difference may account for the larger loadings of Factor $\hat{Y}$, Amount of Work, on most of the categories of job performance values.

The Estimated Factors, Interaction Categories, and Biographical Information

The fifth section of loadings to be presented includes two somewhat separate sets of measures. The first is eight scores from the group interaction situation, and the second is five items of biographical information. The loadings of the measures are presented in Table XIII-11.

Factor $\hat{A}$, *Exchanging Information*, appears to be somewhat more characteristic of women principals than of men (L = .45). The other loadings on this factor are too small to warrant interpretation.

The nature of the unique part of Factor B, *Discussing before Acting*, is made much clearer by the negative loadings of the group interaction categories on this factor. The consistent pattern of negative loadings on group interaction categories makes it clear that planning to discuss an in-basket problem with others is not prompted by any special skill in face-to-face interaction. This observation, together with the small negative loading of Total Years in Administration (L = -.18), suggests that the unique part of the in-basket factor Discussing with Others, is simply recognition of a need for advice and counsel.

The group interaction categories provide no useful information about Factor $\hat{C}$, *Complying with Suggestions*. The loadings of the biographical variables indicate that *Complying with Suggestions* is much more a characteristic of men who are elementary principals than of women (L = -.60). It is also characteristic of the younger less-experienced principals (L = -.43).

The group interaction categories have consistently positive loadings on Factor $\hat{D}$, *Analyzing the Situation*. Those that reflect most clearly an active or even a dominant participation in the group interaction have the highest loadings on Factor $\hat{D}$ (Amount of Talking, L = .32 and Suggest New Procedures, L = .27). Such participation is consistent with the view of the personality of the principals who engaged in situational analysis which was discussed in an earlier section. Factor $\hat{D}$ also appears to be more characteristic of men

TABLE XIII-11. LOADINGS OF GROUP INTERACTION CATEGORIES AND BIOGRAPHICAL INFORMATION ON ESTIMATED IN-BASKET FACTORS

Category or Item	Estimated First-Order Factors								Estimated Second-Order Factors	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	$\hat{X}$	$\hat{Y}$
Group Interaction Category										
Frequency of Interaction	-.05	-.15	.10	.24	.21	.14	-.49	-.09	.20	.07
Gives Positive Information	.05	-.31	.04	.18	.09	.33	-.16	-.09	.15	.14
Asks for Information	.09	-.23	-.02	.18	.06	.06	-.23	-.04	.10	.06
Suggests New Procedures	-.08	-.15	.06	.27	.06	.17	-.36	.01	.23	.04
Presents Facts Effectively	.16	-.31	-.07	.22	.23	.03	-.43	.04	.25	.23
Makes Decisions Effectively	.08	-.23	-.06	.16	.24	.09	-.31	.09	.23	.23
Amount of Talking	.08	-.29	.00	.32	.32	.13	-.46	-.09	.21	.21
Attempts to Influence	.04	-.27	.00	.25	.30	.10	-.36	.00	.09	.22
Biographical Information										
Total Years in Professional Work	.09	-.18	-.49	.01	.08	.04	.44	.28	.01	.04
Total Years in Administration	.00	-.26	-.31	.22	.11	.07	.17	.23	-.07	.07
Total Years of Academic Preparation	-.01	.02	.08	.08	-.08	-.01	-.15	.04	.14	.03
Age	.02	-.15	-.43	.05	.06	.02	.40	.28	-.05	.00
Sex (Men = 1, Woman = 2)	.45	-.17	-.60	-.42	.22	-.07	.50	-.03	.13	.08

than of women principals (L = -.42) and perhaps to be positively related to amount of administrative experience (L = .22).

The group interaction categories have positive loadings on Factor $\hat{E}$, Maintaining Relationships, and the pattern of these loadings is similar to that for Factor $\hat{D}$. The major difference in loadings is for the score Suggests New Procedures, which has a higher positive relationship with Factor $\hat{D}$ than with Factor $\hat{E}$ (L = .27 as compared with .06). Analyzing the Situation thus appears to contain an element of readiness for change that is not evident in Maintaining Relationships. These two factors also differ in that Factor $\hat{E}$ is more characteristic of women and Factor $\hat{D}$ of men (L = .22).

Although all the group interaction categories have positive loadings on Factor $\hat{F}$, Organizing Work, only the score Gives Positive Information has a loading large enough (L = .33) to warrant interpretation. This definite preference for expressing positive information could be viewed as consistent with the prior information presented in the discussion of the basic personality factors in Organizing Work. Perhaps the personal insecurity noted in the discussion of the relationship with personality factors could be involved in the preference for presenting positive information that is seen here. The biographical variables do not have interpretable loadings on Organizing Work.

The general impression of weakness that has been developed regarding Factor $\hat{G}$, Responding to Outsiders, is further supported by the relatively large and negative loadings of the group interaction categories on this factor. Principals who were responsive to outside pressure in their work on the in-basket problems tended to be ineffective in group interaction. The basic personality pattern of the responsive principal discussed earlier may also be responsible for the picture seen here of infrequent and ineffective group participation. The biographical variables have loadings indicating that Responding to Outsiders tends to be more characteristic of the women principals (L = .50), the older principals (L = .40), and those who have the longer background of experience in education (L = .44). This longer experience is likely to be teaching experience rather than administrative experience.

The group interaction categories show no interpretable loadings on Factor $\hat{H}$, Directing Others. There are, however, small positive loadings of experience and age on this factor (L = .28).

The interaction measures have small and generally positive loadings on both second-order factors, Preparation for Decision ($\hat{X}$) and Amount of Work ($\hat{Y}$). The pattern of the loadings is similar on both factors with minor exceptions involving the categories, Frequency of Interaction, Suggests New Procedures, and Attempts to Influence. The only interpretation that seems justified is that the superior mental abilities and greater professional knowledge found to be associated with these second-order factors in in-basket performance are also involved in effective group interaction. The five biographical variables do not have important loadings on the second-order factors.

The Estimated Factors and Performance Evaluations

The sixth and final section of the matrix of factor loadings to be discussed contains 17 evaluations of the performance of the principals. Fifteen of the 17 are made by superiors and teachers, based upon the performance of the principals in their regular position in their home schools. The remaining two are judgments made by project personnel. Table XIII-12 presents the loadings of the 17 measures on the estimated factors.

Each of the 17 ratings or other evaluations of the principal's performance has a positive loading on Factor $\hat{A}$, Exchanging Information, and all except one of the superiors' ratings are substantial in size (L = .34 to .62). It appears that a principal who accepts exchanging information as an important part of his role in the administration of the school system will favorably impress his superiors. From the point of view of a superior, the principal is an important channel in the communication of the superior's influence and control over the operation of the school system; a superior must rely upon this principal to carry out his wishes and must depend upon his principal for much of the information that he needs to function effectively. Such a view of the relationship between the principal and his superiors is consistent with the high loadings of the superiors' ratings on Factor $\hat{A}$.

The general direction of the loading of the evaluative measures on the unique part of Factor B, Discussing before Acting, is negative. To involve others frequently in discussions of administrative problems appears to be regarded as a sign of weakness by both the principal's superiors and his teachers. Superiors apparently regard such discussion as indicative of a lack of knowledge of administration (L = -.40) and teachers as a lack of initiative (Initiation of Structure)(L = -.30).

The loadings of the 17 measures on Factor $\hat{C}$ are similar to those on Factor $\hat{B}$ in that they are generally negative, but they are generally somewhat larger for Complying with Suggestions. Superiors regard Complying with Suggestions as indicative of (1) a lack of

TABLE XIII-12. LOADINGS OF PERFORMANCE EVALUATIONS ON ESTIMATED IN-BASKET FACTORS

Performance Evaluation	Estimated First-Order Factors								Estimated Second-Order Factors	
	$\hat{A}$	$\hat{B}$	$\hat{C}$	$\hat{D}$	$\hat{E}$	$\hat{F}$	$\hat{G}$	$\hat{H}$	$\hat{X}$	$\hat{Y}$
Superiors' Ratings										
Interest in Work*	.52	-.22	-.39	-.13	.09	-.27	-.06	-.07	.31	.11
Sticking to a Job	.46	-.28	-.36	-.06	.09	-.25	-.11	.01	.25	.12
Getting Along with Teachers*	.35	-.03	-.23	-.19	.13	-.20	-.01	-.19	.18	.03
Getting Along with Parents*	.34	-.07	-.21	-.16	.07	-.24	-.06	-.09	.15	.04
Getting Along with Supervisors*	.46	-.11	-.33	-.26	.08	-.31	.07	-.06	.14	.09
Knowledge of Administration	.53	-.40	-.33	.03	.02	-.21	-.12	-.02	.25	.18
Knowledge of Teaching*	.59	-.20	-.43	-.22	.09	-.30	.03	-.05	.35	.17
Rapport with Children	.16	.11	-.18	-.22	.05	-.18	-.05	-.06	.23	-.09
Written Communication	.55	-.34	-.20	-.04	-.07	-.19	-.09	-.14	.20	.15
Understanding*	.52	-.21	-.22	-.07	-.05	-.25	-.13	-.05	.37	.20
Oral Communication (Informal)	.44	-.17	-.12	-.06	.10	-.17	-.27	-.19	.35	.18
Over-All Impression*	.62	-.25	-.41	-.23	.11	-.35	-.10	-.07	.31	.13
Teachers' Questionnaire Scores										
Consideration	.11	-.01	-.06	-.21	.49	.02	-.13	-.26	-.01	.10
Initiating Structure	.09	-.30	-.30	-.06	.14	.20	.06	.09	.11	-.01
Teachers' Reaction	.21	-.16	-.20	-.18	.42	.08	-.09	-.21	.13	.09
Staff Members' Ratings										
Staff Rating	.16	-.13	.06	.16	.12	.00	-.34	-.11	.25	.20
In-Basket Scorers' Ratings										
Scorers' Rating	.20	.09	.18	.09	.08	.04	-.08	-.02	.41	.55

*Sign changed in order that a high loading will correspond with a favorable rating.

knowledge of teaching and administration (L = -.43 and -.33), (2) lack of interest in the job and ability to stick to it (L = -.39 and -.36), and (3) perhaps a reflection of inability to get along with others. Teacher reactions are again negative and indicate that ability to initiate structure is associated with Factor $\hat{C}$ (L = -.30).

The loadings on Factor D, Analyzing the Situation, are generally negative but small. Superiors note a lack of knowledge of teaching (L = -.22) and some failure to get along with superiors (L = -.26), or to develop rapport with children (L = -.22) for principals who analyze the situation. Teacher ratings of consideration load negatively on this factor (L = -.21). These relationships are consistent with the loadings noted in the personality area, especially those indicating that aloofness, dominance, and a tough,practical orientation were associated with Analyzing the Situation.

The superiors' ratings do not show interpretable loadings on Factor $\hat{E}$, Maintaining Relationships. However, the highest of the small loadings is for the rating item Getting Along with Teachers (L = .13) which is in good agreement with the teachers' reports. The Teachers' Reaction score and their descriptions of the consideration which characterizes their principals' behavior have substantial positive loadings on Factor $\hat{E}$ (L = .42 and .49).

The loadings of the superiors' ratings on Factor $\hat{F}$, Organizing Work, are again consistently negative. It is doubtful that the actual behavior of organizing work would be disapproved by superiors; it is more likely that the pattern of personality characteristics which was shown to be associated with this factor in the principal's work was regarded unfavorably. That the superiors' negative impression may be created at the more personal level is suggested by the fact that the highest of the negative loadings is for the rating item Over-All Impression (L = -.35) followed by the item Getting Along with Superiors (L = -.31).

The two loadings on Factor $\hat{G}$, Responding to Outsiders, that are large enough to be interpreted give additional support to the view of the basic nature of this factor that has been developed. The two loadings are both negative. One is a rating made by superiors on the item Oral Communication (Informal) (L = -.27) and the other by the staff member (over-all impression) at the conclusion of the test week (L = -.34). The desurgent personality characteristics which were found to be associated with this factor might account for both tendencies in the ratings.

The teachers' general reaction and their description of their principals' consideration are both negatively loaded on Factor $\hat{H}$, Directing Others (L = -.26 and -.21). This is consistent with earlier observation of an element of disregard for human relations in this factor.

Evaluations made by superiors, staff members, and the in-basket scorers all are in agreement in having definite positive loadings on the second-order Factor $\hat{X}$, Preparation for Decision, and also tend to be consistently positive on Factor $\hat{Y}$, Amount of Work. The in-basket scorers' over-all impression of the principals loads high on both second-order factors, particularly on Factor $\hat{Y}$ (L = .55). Principals who refrain from hasty decisions and who produce a good volume of work apparently make the better impression on those who judge their performance.

Summary of Analysis

The chart below summarizes the major relationships between the performance of the principal on the in-basket tests and the other variables.

Although the information presented in the chart is highly simplified, it provides a quick over-all summary of the major relationships between performance on the in-basket test problems and the other variables of the study. Further interpretation and consideration of the implications of these relationships will be the theme of Chapter XIV.

The chapter to follow will draw heavily upon the facts and data reported in this chapter. Its function will be to depart from factual reporting that has characterized all of the preceding chapters to a general and speculative interpretation of the implication of the study for the solution of many practical problems which face the educational administrator.

FIGURE XIII-1. SUMMARY OF RELATIONSHIPS WITH THE UNIQUE COMPONENTS OF IN-BASKET PERFORMANCE FACTORS

Performance on In-Basket Problems	Abilities and Knowledge	Personality, Interest, and Values	Professional Concerns	Interaction Performance	Biographical Data	Evaluations
Factor X, Preparation for Decision	Fluent, facile with symbolic material, sees associations quickly, good at reasoning, knows school administration, elementary education, science, and fact about the general cultures, learns new material rapidly	Values educational needs of pupils. Interests similar to psychologists and lawyers	Concerned with most areas of teacher performance; especially objectives, planning, methods, teacher personality, pupil motivation and child growth	Active and effective in group discussion, suggests new procedures	(Not related)	Superiors--positive, staff members--positive, scorers--strongly positive
Factor Y, Amount of Work	Over-all high ability, fluent with words and ideas, knows elementary education, school administration, cultural and scientific material, learns new material rapidly	(Not related)	Concern with curriculum, child growth, teacher personality, personnel problems	Effective in interaction, talks a lot, tries to influence	(Not related)	Superiors neutral to slightly positive, staff members positive, scorers strongly positive
Factor A, Exchanging Information	Has great vertal knowledge and facility, knows elementary education, school administration and facts about the general culture	Sociable, sensitive, trusting, confident, and relaxed. Interests like, superintendents, lawyers or psychologists unlike, policemen	Concerned with teacher and pupil personnel problems, especially with the reaction of pupils to the educational program	(Not related)	More characteristic of women	Superiors--very positive, teachers--positive, scorers--positive
Factor B, Discussing Before Acting	(Not related)	Mature, self confident, and relaxed. Interests like policemen and public administrators	(Not related)	Reluctant to participate, regarded as ineffective	Little administrative experience	Superiors--negative, teachers--negative
Factor C, Complying with Suggestions	Ability to reason and sees relationships, knows general cultural facts, science and mathematics, learns new material rapidly	Aloof, shy, practical, skeptical, independent, insecure, unstable and tense. Interests like policemen, unlike school superintendents	Not concerned with objectives, evaluation, planning and continuity, curriculum, or child growth and development	(Not related)	Young, little experience, more characteristic of men	Superiors--very negative, teachers--negative
Factor D, Analyzing the Situation	Ability to reason and see relationships, knows general cultural facts, science and mathematics	Aloof, dominant, practical, shrewd, feels presure. Interests like policemen and public administrators	Not concerned with classroom climate or routines	Participates fully and moderately effectively, talks a lot and suggests new procedures	Has administrative experience, more characteristic of men	Superiors--negative, teachers--negative
Factor E, Maintaining Relationships	Slow in seeing relationship, lacks knowledge of science and mathematics	Sociable, lively, sensitive, confident, dependent, and relaxed. Interests of superintendents and lawyers	Concerned with instructions, curriculum, personnel, public relations	Participates fully and effectively	More characteristic of women	Teachers--very positive
Factor F, Organizing Work	(Not related)	Easily, frustrated, inflexible, shy, skeptical, insecure, unstable, and tense. Interest unlike superintendents, administrators and psychologists	Concerned with pupil reactions, physical setting of classroom	Emphasized positive information in interaction, not effective	(Not related)	Superiors generally negative, teachers positive regarding initiating structure
Factor G, Responding to Outsiders	Lacks general ability, lacks knowledge of science and mathematics school administration and general culture	Submissive, subdued, shy, naive, stable and relaxed. Interest unlike public administrator and lawyers	Concerned with the objective, planning, evaluation, planning and effects of teacher performance	Does not participate, regarded as ineffective	Has large amount of teaching experience, older, more characteristic of women	Superiors neutral to slightly negative, staff members negative
Factor H, Directing Others	Lacks knowledge and ability, unable to learn new material quickly	Sober and stable. Interests unlike school superintendents and lawyers	Concerned with objectives but not personnel or pupil reactions	(Not related)	Has experience in education, older	Teachers--negative

CHAPTER XIV

IMPLICATIONS FOR THE PRACTICE OF ADMINISTRATION

This chapter contains a brief recapitulation of the study and a discussion of its implications for the practice of administration. A final section concerns the implications of the study for theory and research.

In the preceding chapters the analysis and interpretation of data have been reported with the conservatism which is traditional for a research report. Few liberties were taken in considering what the findings could imply. The discussion in this chapter may at times go beyond a narrow interpretation of the research findings, and the authors may at times reveal their biases and values--biases that may differ from those of the reader. The suggested implications, however, will never be simply "arm chair" speculations; they will be held within reasonable bounds by constantly relating them to specific findings reported in earlier chapters.

The Study--A Recapitulation

The three stated objectives of the study were:

1. To determine dimensions of performance in the elementary school principalship and thus develop a better understanding of the nature of the job of the school administrator.
2. To provide information helpful in the solution of the problems of selecting school administrators.
3. To provide materials and instruments for the study and teaching of school administration.

The conduct of the study was divided into six steps, beginning with a survey of job descriptions of the elementary school principalship and conceptual analyses of the tasks of the school administrator. This work resulted in the construction of a 12-category classification schema which was useful to the research team in organizing the various aspects of the work of the elementary school principal.

The second step entailed the development of the materials used to simulate an elementary school and thus to create a standard administrative situation. Background materials were developed so that the subjects could be taught the important features of the school in a day and a half. Special in-basket tests, kinescopes, tape recordings, etc., were constructed to present administrative problems in the simulated school situation. Several published tests of abilities, knowledge, interests and personality were selected to be administered to the principals who were subjects of the study. Other instruments were constructed to obtain information regarding the experience, training and performance of the subjects in their home school situation.

Third, the materials were then given a preliminary tryout with 55 principals. Only minor revisions were found necessary. Fourth, centers were then set up in various parts of the country for testing an additional 177 principals. The testing was completed during the following year.

The fifth step of the study was concerned with the scoring and analysis of the products of the work of the school principals. Forty of the in-basket scoring categories were included in a factor analysis, which resulted in eight first-order factors and two second-order factors. Similar procedures were used in the analysis of data from other parts of the study. Composite scores based on the eight first-order factors were related to all the other measures obtained on the subjects. Finally, a special use of a factor analytic method permitted a detailed examination of relationships among all the major variables of the study and unique components of administrative performance.

Implications for the Selection and Preparation of Administrators and the Practice of Administration

Since administration, like medicine, is a highly practical art, its research may in part be judged in terms of its usefulness in solving the problems and dilemmas of practicing administrators. The research may also be judged in terms of its contribution to scientific understanding of administrative behavior. There are, in this study, implications for the solution of many practical problems of administration. These are discussed below under the headings of Selection, Preparation and Practice.

Selection

There are many questions concerning the selection of administrators for which there are at present no known satisfactory answers.1/ One of the most pressing needs is for a dependable method for selecting people for their *first* principalship. This is probably the measure most desired by superintendents and school boards and is the one discussed below. A selection procedure is also needed for determining

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1/ For the most recent review of selection research see: American Association of School Administrators, *Professional Administrators for America's Schools*. Thirty-Eighth Yearbook, Washington: The Department, 1960, Chapter VI.

the best qualified among those who have been school principals and who have had different amounts and kinds of experience; most school districts either employ experienced principals from other districts or promote from smaller to larger schools within their own system. Further, selection procedures are needed by graduate schools of education to screen people for admission to programs of preparation.

Let us consider some of the problems of selecting people for their initial principalship. Among the questions of immediate interest are these:

1. Should men be selected for the principalship in preference to women?
2. Is experience in education essential to success in the principalship?
3. Is personality, as measured by tests, likely to be predictive of administrative performance?
4. Are mental abilities, as measured by tests, related to administrative performance?
5. Are interests, as measured by inventories, indicative of administrative performance?
6. Can a battery of relatively short, economical paper and pencil tests be recommended for use in selecting principals?

Men-Women--One of the perennial questions which is asked in selecting principals is "Should men be appointed as elementary principals in preference to women?" While boards of education appoint relatively more women as principals of elementary schools than secondary schools, they nevertheless display a distinct preference for men. This is clearly demonstrated by the fact that while men constitute only seven percent of the elementary school teaching force, they account for 59 percent of the principalships.2/ Is this preference justified by superior performance of men principals? This study has made it possible to compare the administrative performance of 137 men and 95 women principals who handled the same problems in the same school situation. What can now be said in answer to this perennial question?

The aspects of administrative performance most characteristic of women as reflected in the unique component of the factors is that of Factor A, Exchanging Information, Factor E, Maintaining Organizational Relationships, and Factor G, Responding to Outsiders. On the other hand, the administrative performance of men principals is characterized by Factor C, Following Suggestions Made by Others, and Factor D, Analyzing the Situation. When performance was eval-

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2/ Department of Elementary School Principals, The Elementary School Principalship, Thirty-Seventh Yearbook, Washington: The Department, 1958, p. 227.

uated by superiors and by teachers, it was found that both groups were somewhat negative toward men principals and generally positive toward the women principals.

The administrative performance of each can be further described by referring to the scoring categories which make up these factors (see Table XII-1). These specific categories clarify the difference between men and women as principals and help to explain why women are preferred by superiors and teachers. The work of women principals was characterized to a greater degree than that of men by asking subordinates for information. Women tended to do more work on in-basket items, discussed problems more with superiors or outsiders, and related information gained from the background materials to the problems under consideration somewhat more frequently than men. The characteristic on which the performance of men principals exceeded that of women was in marked contrast. Men made more concluding decisions, followed pre-established structures more often and took a greater number of terminal actions. In general, the difference between men and women in their performance on in-basket problems is that the women involved teachers, superiors and outsiders in their work, while the men tended to make final decisions and take action without involving others.

This contrast in the behavior of men and women is very similar to that found in the Florida Leadership Project.3/ Behavior similar

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3/ Grobman, Hulda and Hines, Vynce A., "What Makes a Good Principal?" The Bulletin of the National Association of Secondary School Principals, Vol. 40, No. 223, Nov. 1956, pp. 5-16.

to that described above for men was called "undemocratic." It was found that "democratic" behavior was more characteristic of women; furthermore, teachers expressed greater satisfaction with the human relations which existed in schools administered by democratic than by undemocratic principals.4/

Since a modern concept of the job of an elementary school principal is that he provides instructional leadership in the school, differences between men and women in the ability to perform this function are of interest. Superiors' ratings on "knowledge of teaching methods and techniques" tended to be higher for women. In dealing with the instructional situations presented on kinescopes, women tended to be more concerned with the objectives of teaching, pupil participation, and the evaluation of learning. It would appear that in the eyes of superiors and in terms of how they handle the problem of evaluating the performance of probationary teachers, the women are more able or willing to provide instructional leadership than are men.

When scores on tests of mental ability were compared, no extreme differences were found. Difference favored women slightly in the areas of verbal fluency and number facility, while men earned higher scores on tests of reasoning and visualization.

In considering the question, "Should men be appointed as elementary principals in preference to women?" it would appear that the answer is probably no.

This study does not present evidence that a woman principal should always be preferred over the man who may also be a candidate. It

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4/ Ibid. p. 10.

does indicate, however, that men are not, as a class, overwhelmingly superior to women as elementary school principals. The evidence appears to favor women if the job of the principal is conceived in a way that values working with teachers and outsiders; being concerned with objectives of teaching, pupil participation and the evaluation of learning; having knowledge of teaching methods and techniques; and gaining positive reactions from teachers and superiors. But the relationship is not so strong that choosing a women will automatically produce these characteristics; there is a great deal of overlapping of the distributions of scores on such attributes.

Experience--Practically all of the state certification requirements for the elementary school principalship include teaching experience. Is experience as a teacher related to administrative performance?

In this study no distinctions were made between teaching experience and other professional experience in education, except for the category "administrative experience." Comparisons cannot be made of various combinations of teaching and administrative experience. Some facts relevant to the question are available however.

There are substantial loadings of experience on the unique components of three of the administrative performance factors. The highest of these is the negative loading on Factor C, Following Suggestions Made by Others. Principals who score high on Factor C exhibit a pattern of performance in which, when confronted by a problem accompanied by a suggestion as to how it might be handled, tend to follow the suggestion. Other evidence suggests that decisions are not made by reliance upon knowledge of school administration and supervision, elementary school education or the objectives of education. It would appear on the contrary that principals who lack experience in education are forced to choose among suggestions made to them on the basis of their general ability to reason. They follow suggestions which would appeal to the layman as reasonable, even though professional knowledge might have suggested a different course of action.

On the other hand, those principals with the most experience in education display the administrative performance described by Factor G, and somewhat less that described by Factor H. The unique component of Factor G, Responding to Outsiders, is a pattern of performance in which the principal gives information to outsiders, follows suggestions or leads by outsiders and shows courtesy to outsiders either as individuals or groups. Factor G principals show concern for all phases of teaching but earn negative evaluations from superiors, appear to lack ability and knowledge and are relatively ineffective in the interaction problem. Those principals characterized by the unique component of Factor H, Directing the Work of Others, earn negative ratings from teachers, are concerned with objectives of instruction but not with teachers or pupils, and lack general knowledge and ability.

The evidence on the value of experience is not as clear-cut as the professional educator might like. There is no evidence in this study as to the administrative performance of principals with no teaching experience. Those principals who have little administrative experience tend to follow suggestions made by others and discuss with others before taking final action. Those with more administrative experience respond to outsiders, direct the work of others, and analyze the situation. It would seem that the performance of those with more, rather than less, experience would result in somewhat better instructional programs. Concern or sensitivity for instructional problems appears unrelated to amount of administrative experience. Since a prime purpose of the schools is to give instruction, it would seem that performance on this area should show significant differences, but the study failed to provide evidence that could be interpreted in this direction.

Personality--The possibility of using personality tests in the selection of administrators has intrigued students of administration for years. Until this time, however, the efforts of researchers have not yielded generally useful results. The American Association of School Administrations 1960 Yearbook Commission summarized efforts to date in this way:5/

> Another set of traits which undeniably bear some relationship to leadership is most often lumped under the portmanteau term "personality." There are several objective-type, paper-and-pencil inventories which purport to measure traits, and these instruments are all available, even though they require an analyst for interpretation. As yet, no convincing case can be made for their use in selection, other than in screening out extreme deviants.

A similar attitude towards personality tests has been expressed by writers in the field of business administration. For example, Meyer and Bertoti say:6/

5/ Professional Administrators for America's Schools. Ibid. p.156.

6/ Dooher, M. J. and Martiniz, Elizabeth, (Eds.) Selection of Management Personnel, New York: American Management Association. 1957. p. 437.

> .....personality tests have generally proved less valid than tests of abilities or aptitudes.
>
> Even if we could measure personality traits accurately, there is certainly room for doubt that we know what the ideal "personality" is for an accountant, a salesman, a lawyer, a manager, or even a president. Research studies have shown that often men with entirely different personalities have been successful in the same positions.

The difficulties in studies of the use of personality tests in administrator selection are of three varieties:

1. The lack of a suitable criterion of success against which the tests can be examined for validity.
2. Special technical problems in the construction of tests of personality.
3. The use of simple correlational analyses in investigating possible relationship between test scores and criterion information.

When the personality data in this study were treated in accordance with the usual correlational procedures, the same results were obtained as are universally reported. For example, when personality test scores were simply correlated with superior and teacher ratings, the highest correlation obtained was .18 (Table XI-16). This one correlation coefficient is significant at the one percent level, but is too low to be of much value in selection. A far different result was obtained, however, when the unique components of the eight factors were used as criterion measures. When this was done, very interesting patterns of relationships with personality test scores were obtained for each of the eight factors.

It will be recalled that coefficients expressing these relationships are not correlation coefficients but are proportional to correlations. For the purpose of the following discussion the problem of proportionality will be ignored. Ignoring this problem does not invalidate the reasoning which follows, but makes it impossible to estimate in advance precisely how much the use of personality measures can add to achieving desirable selections.

Candidates for the position of elementary school principal might first be screened for mental ability and professional knowledge. Personality tests also can make a contribution, particularly if used in conjunction with ability and knowledge tests. It is suggested that personality tests be employed at the second stage of a selection procedure. The first step would be to make certain that the candidates had the ability and knowledge needed to perform effectively in the different areas of the job. Personality tests could then be employed to make selections among those candidates who were known to have met the first screening requirement, i.e., possession of high general and professional ability. The two-step procedure is suggested because ability and knowledge tests appear to have a more general relationship to most of the administrative performance dimensions and because these tests are likely to appear more acceptable to candidates since they have a "face" validity:

As an example, let us assume that a school district wants to employ only principals who are proficient at maintaining organizational relationships (Factor E). The personality requirements, as measured by the 16 PF, for such a principal are that he be: (Table XIII-9)

1. Friendly, socially responsive
2. Lively, and enthusiastic
3. Bold, warm-hearted and spontaneous
4. Self-confident and accepting
5. Free from worry and anxiety.

The coefficients for these characteristics on Factor E range from .29 to .51 and, if taken as a cluster of characteristics, is sufficient to warrant consideration in selection. It can be seen that the characteristics tend to "go together" and form a picture of a personality type. Further, it appears to be entirely reasonable that a friendly, enthusiastic, spontaneous, self-confident, worry-free principal will be strong in maintaining organizational relationships. Candidates who had previously passed the tests of general ability and professional knowledge could then be further screened by use of available personality tests.

Suppose a school district desired a principal whose forte was responding to outsiders, i.e., a principal who would listen to and serve the patrons of the district. What would be the personality attributes of this kind of principal? It appears that they would include: (Table XIII-9)

1. Submissiveness, modesty and obedience
2. Simple sentimental naivete
3. Lack of enthusiasm
4. Shyness and timidity
5. Persistence and stability
6. Lack of anxiety

The coefficients of these personality characteristics on Factor G range from .22 to .37 and also tend to constitute a personality type. But on the other hand, suppose the school district wanted a principal who would stand firmly between his teachers and the pressures of overly active and critical group of patrons. Personality tests could then be applied in reverse direction to that indicated above. This illustrates the impossibility of stating a general formula for the application of personality information; since what scores would be desirable ones is at least in part a function of the particular situation in the school district.

Personality tests may be able to make a valuable addition to a battery of tests for selecting principals, providing the school district is able to describe the principal it wants in terms of the factors in this study.

Mental Abilities and Knowledge--There are several marked relationships of tests of mental ability and knowledge to six of the primary and both of the secondary factors. The relationships could be useful in the selection of principals. Here, as is the case with each of the sections in this discussion of selection, the school district must determine the performance factor or factors which it desires in the principal it chooses. Once the factors are chosen, information on how the candidate scores on tests of mental ability and knowledge may be useful.

Let us suppose that a school district wants a principal whose administrative performance can be characterized as being near the "preparation" end of the bipolar Factor X, "Preparation for Decision vs. Taking Final Action." What tests could help to select a principal who would perform in such a way? Any one or all of the following tests could be used: (Table XIII-8)

1. School Administration and Supervision
2. Education in the Elementary School
3. NTE, General Culture Test: Social Studies, Literature and Fine Arts
4. A battery of tests of basic psychological abilities.

Those principals who score high on these tests exhibit administrative performance which can be characterized as being near the "preparation" end of the Preparation for Decision vs. Taking Final Action factor. In other words, high general mental ability principals are those whose average performance is characterized more by preparation for decision than by taking terminal action.

High work output is another characteristic which might be desired by a school district. This factor (Factor Y, Work Output) is typical of high mental ability principals. The same tests as are predictive of Preparation for Decision would likely predict high work output.

Interest Inventories--Although all of the Strong Vocational Interest Blank scoring keys were used, only five showed much promise of being related significantly to the administrative performance factors: city school superintendent, policeman (negatively), psychologist, public administrator and lawyer. While none of the keys are significantly related to Factor Y, Work Output, two or more keys are related to each of the other factors. Here again, if a district determines the factors it wants in a principal, Strong Vocational Interest Blank scores might be helpful in making a choice.

As an example, interest scores could help to pick a principal high on Factor A, Exchanging Information. Persons high on Factor A have interests unlike those keyed for policeman, but positively related to the interests of city school superintendent, lawyer and psychologist.

A conclusion reached in this study about the problem of selection is similar to that of other studies of the selection of administrators. No one test can be recommended that will unerringly choose a "successful" principal. Selection remains what it has always been, a highly complex act. In fact, this study indicates that the selection of principals is more complex than has been considered in the past. Most of the previous studies have considered that there was such a person as a "successful" administrator and have attempted to find instruments that could predict who these people are. This study has pointed up the fact that different reference groups--the principals' teachers, their superiors, and lay in-basket test scorers--do not agree as to the "good" or successful principal. Reliance upon the judgments of a single reference group as criteria could lead one far astray.

A significant contribution to the study of selection that is made by this study is the identification of factors of administrative performance. If a school district can describe the principal it desires in terms of these factors, then some of the tests used in this study should be considered for use in selecting the desired principals.

Other suggestions for selection are as follows:

1. Women should not be discriminated against as candidates for principalships.

2. Personality and interest tests might profitably be employed after all candidates have been screened for mental ability, professional and general knowledge.

Although the discussion of selection problems has been in terms of selecting a principal for a position within a school district, many of the same considerations would apply to the problem of selecting students for graduate training in school administration.

The Preparation of School Principals

One of the most intriguing set of implications of this study is concerned with the preparation of school administrators. College and university programs have come in for considerable criticism of late as witness the statement of the 1960 Yearbook Commission of the American Association of School Administrators.[7]

> The programs (of preparation) appear to be bookish to the ultimate.... The mediocrity of the programs of preparation comes from the sterility of the methods reported. Instruction is classroom bound; administration is talked about rather than observed, felt, and in these and other ways actually experienced. Where the student should be "scared" by exposure to the facts of administrative life, he is instead bored by the tame fare of second-hand success stories.... Generally speaking, schools of education and departments of school administration have not found ways of bringing their students into contact with professors from other disciplines; they have not made use of the public schools as laboratories; and they have not revised preparation programs to include cases, role-playing, field study, simulations, or any other of a multitude of techniques.

All of these woes cannot be cured by one study, yet there are some leads and suggestions in this study. Implications as to the structure, content and methods of teaching and student selection are discussed below.

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[7] American Association of School Administrators. Professional Administrators for America's Schools. Washington: The Department. Thirty-Eighth Yearbook. 1960. pp. 83, 84.

Structure of Programs of Preparation--One of the sets of correlations formed in Table XI-13 should give all professors of school administration cause for concern. This set indicates that the correlation of years of preparation with superiors, teachers and scorers' ratings is zero. There is a small correlation between the research staff's ratings and years of preparation (.17, which is statistically significant) but it is hardly of practical value. This small correlation may be accounted for by the fact that those principals holding doctor's degrees were usually known to the staff members, and this may have influenced some of the ratings. The finding of essentially no relationship between amount of academic preparation and performance on the various tasks in school administration that were investigated is consistent throughout. There is no evidence suggesting that the principal with a lengthier preparation does a more effective job of school administration from any point of view from which one may examine the data.

There are several possible explanations for the correlations approximating zero between the years of preparation and the factors of administrative performance and reference group ratings. One explanation might be that there is nothing taught in programs of preparation that is relevant to being a principal. This is apparently an unsatisfactory explanation, since tests of professional knowledge do correlate significantly and positively with the composite scores of all primary factors except Factor C and also are related to the unique component of many of these factors (Table XII-3 and Chapter XIII).

The correlation of years of preparation with the School Administrative and Supervision test is .17 and the Education in the Elementary School is .07. The possession of professional knowledge is reflected in the performance of the principals, yet is not accounted for by substantial correlations with years of preparation.

A more reasonable explanation is to be found in an examination of the composition of "years of preparation" as this can be discerned from the structure of the programs of preparation for school principals. The variable "years of preparation" used in this study was obtained by adding together all of the post-high school years of formal education. If, for example, the principal was a college graduate with two years of graduate work he would be categorized as having six "years of preparation." The amount of professional education included in "years of preparation" is obscured in such figures, since the principals could have had an almost infinite number of combinations of liberal arts, general education and professional education courses. It is entirely possible, for instance, for some who were graduates of liberal arts colleges not to have had any professional education in their undergraduate years, while it is equally possible for others to have had 30 or 40 semester hours of course work in education in their undergraduate college.

In examining graduate programs of preparation for school administrators, another factor is obvious which might well account for the near zero correlations. This is the fact that graduate programs are not sequential. Systems of prerequisites for admission into courses in professional education have generally not been established.

A student finishing class work for the doctorate might well take the same course as a student beginning his work on the master's degree. Since courses are not sequential it is possible to raise questions regarding the superficiality or lack of depth of advanced courses which have no prerequisites.

Content and Methodology--In recent years there has been a change in thinking about the preparation of school administrators. This has been demonstrated in shifts in curricular offerings at certain universities. As Moore puts it: 8/

> The changes which seem to be most promising are those which recognize administration as a job primarily of action and that while action must be based on essential knowledges, more of our training in the future must center on successful behavior on the part of administrators. Training people to deal with situations, not just know about them is the crux of the matter.

The recent AASA Yearbook referred to above indicates that the changes suggested by Moore had not been adopted by substantial numbers of universities.

8/ Moore, Hollis. Studies in School Administration. Washington: American Association of School Administrators, 1957, p 66.

The successful introduction of course work relating to administrative performance has been retarded because of a lack of theory and/or a taxonomy of performance and because of inadequate methods of teaching. It should be said that one area of preparation, namely school finance,does have a sound theoretical basis and many effective techniques have been developed for its teaching. It is probably because of this that school superintendents rank it first among the courses they have taken. This study suggests a framework around which a part of an action oriented program for the preparation of school principals could be built.

The set of categories comprising a taxonomy of administrative performance is the set of primary factors developed in this study. These are listed in Table XIV-1.

TABLE XIV-1. TAXONOMY OF ADMINISTRATIVE PERFORMANCE

Factor A	Exchanging Information
Factor B	Discussing with Others Before Acting
Factor C	Complying with Suggestions Made by Others
Factor D	Analyzing the Situation
Factor E	Maintaining Organizational Relationships
Factor G	Responding to Outsiders
Factor H	Directing the Work of Others

Before proceeding to discuss the use of this taxonomy in developing a curriculum for preparing school principals, it should be made clear that we are not suggesting a new set of courses, one for each factor. There is no proposal that there be a course Ed. 401, Maintaining Organizational Relationships, or even one super seminar Ed. 503, Exchanging Information. What is suggested is that the factors, the components of administrative performance in the elementary school principalship, be used to suggest experiences which should be provided throughout the total program of preparation.

An obvious example of the use of the components is the factor Organizing Work. This is an aspect of performance on which the principals varied widely. While the factor is most clearly defined by the specific acts of scheduling work, it also includes other aspects of an organized and orderly approach to the handling of administrative problems. There would seem to be little disagreement about the desirability of acquiring the skills called for by high scores on Organizing Work in administrative training.

How could Organizing Work be included in the graduate training program? If only the traditional methods of instruction were used several things might be done. A qualified professor might lecture on the topic, or a practicing administrator might be invited in to tell how he schedules his work. Class discussions on ways of organizing work might be profitable. While these activities may have some training value it is doubtful as to how effective they could be in improving the on-the-job work scheduling habits of principals.

A more effective procedure is suggested by the way in which this research study was conducted. If the in-basket tests revealed the factor of Organizing Work, why not use them to teach the performance factor? The procedure would be relatively simple: put students into a simulated school situation and present them with a large number of in-basket items. The students could work through the items first; then their work could be examined to determine their skill in organization and remedial instruction could be given. Various types of instruction might have value. Each student might report how he organized his work. It probably would be found that some students did each item in the same order they came to him in his in-basket. Others would have read each item and arranged them in groups upon the basis of priorities. Still others would have prepared calendars or guide sheets for work scheduling. If these procedures did not emerge, the instructor could call attention to them. Issues will emerge in the discussion. Why did some students handle certain items immediately while others put them off for a week or more? On what bases does one make choices as to what is done and at what times?

The difference between this approach and the more traditional ways of teaching is clear. Rather than discussing the topic in the abstract, the student does work on a sample of realistic problems and has the opportunity to review his work and compare it with the work of others. He is then in a position where he can talk and think about his work, about his actual performance rather than to listen to someone discuss hypothetical problems in the abstract.

Organizing Work is a good illustration of one type of activity suggested by the factors. Some attention to organizing work is doubtless desirable--at least up to a point--and can be taught directly through the use of the in-basket technique. Other problems in the use of in-basket tests in training are suggested by Factor C, Complying with Suggestions Made by Others. The principals who score high on Factor C appear to listen to teachers, superiors and outsiders when a problem is identified and then through a process of reasoning arrive at a solution. These principals apparently may or may not depend upon knowledge of professional education or objectives of education for guidance. How desirable this type of administrative performance is is open to question. It may be that this is a type of performance that professors would want to discourage in their students. Much the same teaching procedures could be used with Factor C as with Organizing Work. Once the student has taken the in-basket and his work had been examined, the instructor could point out how different solutions might have been arrived at if the student had resorted to knowledge or to objectives rather than simply complying with a suggestion made by others.

The materials used in this study have been used in workshops on school administration at three universities: University of Chicago, Stanford University and Teachers College, Columbia University. The experience gained in these three graduate schools is described in a bulletin published by the University Council for Educational Administration.9/ Workshops were established at each university with varying clientele. Teachers College enrolled only experienced elementary school principals, Chicago enrolled a group of students who were principals or would shortly take their first principalship, and Stanford enrolled a group of graduate students having a range

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9/ Simulation in Administrative Training. Columbus, Ohio: University Council for Educational Administration, 1960, 46 pp.

of backgrounds equivalent to that found at any large university summer session. Different emphases were employed at each location and the workshops were evaluated in various ways.

As a result of this "tryout" a set of strengths and limitations of simulation as a training device was developed. These are paraphrased below:10/

Strengths

1. Since simulation presents representations of real administrative situations, the likelihood of desired transfer of learning to on-the-job situations seems to be much more probable with them than with conventional teaching materials and methods.

2. Simulated materials seem to be ideal for developing an ability to "see the total picture" since the student continually examines specific problems in relationship to their total context.

3. By starting with a representation of real administrative situations, greater responsibility will be placed on the instructor to relate theory and fact. Students will also have better opportunities to evolve meaningful relationships between concepts and facts because they will have to examine generalizations against empirical data.

4. A weakness with traditional programs of preparation is that they deal with what ought to be rather than what is. The use of simulated materials can help to maintain a balance between what ought to be and what is.

5. Simulated materials help a student develop insights about himself, learn scientific concepts and acquire needed skills.

6. Simulated materials are realistic and at the same time susceptible to the control of the instructor.

10/ *Ibid.* pp. 39-44.

Limitations

1. The effective use of any materials depends upon the person directing the learning situations. Simulation cannot take the place of careful planning, enthusiasm or dedication. In other words, it cannot overcome the ill effects of poor teaching.

2. Since simulation is so new as a teaching technique in school administration there is no body of experience from which instructors can gain help. Many professors are apt to stumble from lack of help.

Those who have used simulation are enthusiastic in support of its use in instruction.

Summary--This discussion of implications for programs of preparation for school principals has been concerned with the structure of educational program, its content and the methods of teaching. It was suggested that since graduate programs in educational administration were not sequential, no high positive correlation between criterion measures and years of preparation should be expected. A taxonomy of content related to the development of administrative performance was presented and methods of teaching this content suggested. Reference was made to the uses of simulation in teaching at three universities.

The Practice of Administration

Implications for the practice of administration will be discussed under two headings: the principal at work, and the role of the profession.

The Principal at Work

Leadership. Current literature in school administration has stressed the leadership aspects of administration. This has been particularly true of discussions of the principalship. The impression has been created that "leadership" and "administration" are synonymous. Some of this impression is no doubt the result of authors failing to make clear distinctions between leadership and administration. The definitions of leadership are so numerous and different that it is obvious that all writers are not discussing the same behavior. Factor H, Directing the Activities of Others, is more closely related to common notion of "leadership" than any one of the other factors. It is characterized by "leading action", "courtesy to subordinates" and "gives directions and/or suggestions." Such behavior is not clearly leadership behavior. Perhaps some form of leadership may be implied in such factors as Exchanging Information, Discussion before Acting or Maintaining Organizational Relationships. *The fact is that a clear "leadership"* factor did not emerge from the study.

The study provides no reason to question the prescription that principals "ought" to be leaders and that leadership should be an important part of the principals' work. However, the facts of the study indicate that administrative performance is much more than leadership as defined by Factor H and that when leadership is stressed to the exclusion of other aspects of administration, a one-sided, inadequate and incomplete picture is presented.

Content of the Job. A study of what the principals did not stress in their work is of interest to practicing administrators. Twelve of the in-basket scoring categories had mean scores of less than one. In other words, although there were 96 opportunities in the school in-basket test to register a score, the mean score on 12 categories was less than one. What kinds of performance is covered by these 12 categories that principals did employ?

Most theories of administration recognize one major aspect of administration to be that of control. Administrators generally employ some means of assuring themselves that what they want done is actually done, that they get some form of feedback or report on the progress of work and that assigned tasks are completed on time. This type of performance was covered by two of the infrequently used categories: "sets a deadline" and "follow-up or feedback planned." In general, the principals failed to demonstrate that they were aware of these forms of administrative control. Why they failed to do so is a matter of speculation. It may be the type of control covered by these scoring categories is not the type actually employed by elementary school principals. A further possibility is that principals do not, in fact, use control, although this seems far-fetched; one has difficulty in picturing a social institution in which controls do not exist. A third possibility is that the authority structure of elementary schools is so strong that principals have a type of implicit control--that is, when requests are made or directions are given the desired response is automatic. All social organizations employ some form of control, and since it has been observed that principals do not employ the overt and obvious control techniques, the controls employed must be of the less obvious and more informal type. It is a well documented fact that the more powerful the controls, the less obvious are their manifestations.[11]

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[11] For a discussion of this point see Griffiths, Daniel E. Human Relations in School Administration. New York: Appleton-Century-Crofts, 1956. Chapter 6, "Human Relations and Authority."

The next set of little used scoring categories tends to add some credence to the notion that the school is a highly formal organization with strong authority orientation. Two categories, Informality to Outsiders and Informality to Superiors, were almost never used. The principals did not demonstrate informality toward either their superiors or outsiders, who are generally considered as superiors by school administrators. Further, there was little or no evidence of behavior indicating informal work with superiors, i.e., of explaining actions to superiors or referring to superiors. The total picture is that of the principal working largely independently and initiating little interaction with his superior. Perhaps the principal does not consider his superior as a counselor or advisor but as his "boss," a person with whom he has a strictly formal relationship.

Another set of unused categories is also of interest. The set includes: Improves working conditions, Improves staff, Backs up staff. The principals gave practically no evidence of being interested or concerned with the well-being of their teaching staffs. While this lack of concern may be an artifact of simulation, the lack is so nearly complete that it does not seem as though this is the only reason. This performance contrasts with the relatively high use of courtesy toward subordinates, but it is likely that the use of courtesy is another example of formalism. Principals can be formally courteous towards subordinates without demonstrating concern for them in terms of backing them up, improving working conditions or improving staff.

Writers on school administration have, for a number of years, recommended that principals delegate more to their subordinates. Three scoring categories relating to delegation were employed in the scoring of in-basket responses: Delegates completely, Delegates partially with control, Delegates partially without control. Delegation was defined as deputizing, that is, asking someone else to do what one might be expected to do himself. The mean score on Delegates completely was .75, Delegates partially with control 1.15 and on Delegates partially without control 2.89. The most obvious conclusion is that there is little delegation in the elementary school. It would further seem reasonable that little delegation should be expected since principals generally have no one to delegate to, except to a teacher, each of whom has a full-time job. Delegation should not be expected in elementary schools until the schools are staffed with personnel to whom principals can delegate.

One of the sterotypes of the elementary school principal that is widely held presents the principal as "a school housekeeper whose major function is picking up after others."12/ Three scoring categories were devised to get at the values held by principals in regard to the basis for reaching decisions. These were: Uses human values, Uses program values and Uses physical values. It was reasoned that if the stereotype

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12/ Cooperative Development of Public School Administration, The Elementary School Principal and Director (Albany, New York: State Teachers Association, 1956), p.4.

was correct the principals frequently would use physical values in analysis of the items. The category carrying this name was developed so that when concern for buildings, property and equipment was expressed it would be noted. The mean score for the category was .27, the third lowest score for all categories. Human values and program values were used to a greater extent.

The stereotype is further questioned by scores on the Instructional Awareness Categories and Job Performance Values which were used to score responses to the kinescopes showing probationary teachers and the tape recordings of special educational problems (see Chapters IX and X). In each case the categories related to physical values had low frequency scores. Scores relating to human values were much higher. It would appear that the stereotype of the elementary school principal as a "housekeeper" is not justified in terms of the findings of this study.

Elementary principals apparently do little that could be called coordination. This category had a mean score of .61 for the three education in-baskets. The principal would have received a score if he had attempted to arrange activities so that they interlocked, promoted efficiency, or avoided conflict. Again, this low score may reflect the nature of the school as an organization. The Whitman School was committed to the "self-contained classroom concept" in which each teacher taught all of the subjects. Consultants were employed to help teachers, but they worked on schedule so there was little need to coordinate efforts. Since teachers worked alone, there was no need to coordinate efforts in this instance. It may well be that coordination is a concept not particularly appropriate to describing the performance of the elementary school principal. The fact that the mean score for the Bureau of Business In-Basket was only slightly higher (.37 vs. .20 for one education in-basket) indicates that it was not too appropriate for this particular type of business situation either.

Evaluation of Principals. It is a rare textbook in the field of educational administration which discusses the evaluation of the elementary school principal. There may be good reasons for this deficiency. Very little research has been done and few school systems use formal evaluation systems for principals. The results of this study indicate that school districts might well consider introducing a system of formal evaluation of principals.

While this study employed four different classes of raters, only two would be open to a school district- superiors and subordinates. Ratings by both classes were useful in explaining other measures of administrative performance. It was found that while the ratings were not the same for each class of judges, the ratings were complementary. Superiors apparently look for characteristics not seen by teachers, and vice versa.

One of the first questions raised when evaluation of personnel is discussed is, How reliable are the instruments? As reported in Chapter XI a 13-item form was developed for use by superiors in rating the performance of principals. When used by superiors who were confident of their ability to judge a principal's work, the reliability coefficient was .85. This was in contrast with ratings by superiors who were not confident of their ability, the reliability then being .74. The reliability of a rating is, at least in part, dependent upon the familiarity of the judge with the subject. Certainly, in practice, no one should ever rate the effectiveness of another if he is not confident of his judgments. Teachers used two forms to rate their principals. The Principal Behavior Description Questionnaire had a reliability of .83, the Teacher Reaction Form of .82. The research team considered the reliabilities on all three instruments to be high enough for purposes of the study. They are probably sufficiently high for the information they yield to be useful to a school district.

When ratings of superiors and subordinates were compared, the results were similar to those of several other studies: superiors and subordinates hold conflicting expectations of leader behavior.13/ In this study, it was found that ratings of superiors stressed the nomothetic dimensions of administration while teacher ratings emphasized the idiographic dimension. Superiors tended to rate higher those principals who demonstrated an ability to get along with superiors, know administrative practices, show interest in their work, demonstrate the capacity to stick to the job, understand written communication and have knowledge of teaching methods and techniques. Teachers, however, rate higher those principals who demonstrate ability to get along with teachers, pupils and parents and who use informal oral communication.

It would seem that the judgments are not antithetical and that a superintendent, in evaluating the performance of a principal, would want both viewpoints. Ratings of the superiors of the principal

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13/ Hencley, Stephen, "Theories on Behavior of School Leadership" *Overview*. December, 1960. pp. 28-30.

hold higher those who operate "by the book" while ratings of teachers hold higher those who administer in terms of the people in the situation.

The Role of the Profession

Without getting into the question of whether school administration or administration in general is a profession, or even whether education is a profession, there are implications for professional activities in this study. There is really only one test of professionalism and that is public acceptance. A group of practitioners of an art can proclaim to the heavens that they constitute a profession, yet if the public does not hold a similar view the talk is for naught. This point of view is discussed by Hearn: [14]

> Practice is professional to the extent that it is sanctioned by society. Such sanction to practice and to educate for practice is earned as a field demonstrates its ability to perform its prescribed functions with integrity, knowledge and skill. To act with professional integrity is to act consistently within a framework of values that is shared generally by the members of the profession. To act with knowledge is to act with an awareness of the rationale and probable consequences of one's actions. To act with skill is to exercise such control that one's actions more closely approximate one's intentions. Thus, professional practice is a combination of believing, knowing and doing.

It can be said, in terms of Hearn's statement, that a profession exists in order to define and redefine value assumptions upon which practice is based, to extend knowledge and to help its members acquire and extend their skill. This discussion of implications for professional action is in terms of the three processes discussed above.

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[14] Hearn, Gordan, Theory Building in Social Work, Toronto: University of Toronto Press, 1958. p.1.

Professional Values--Probably the most important task of a profession is to establish the pattern of values by which each practitioner can evaluate himself. The profession should say what is a good principal. It is true that professional associations in school administration have attempted to do this in the past, but their language has been couched in general terms and has tended toward slogans rather than definitions.

It is suggested that the professional association reconsider the possibility of defining the "good principal," employing concepts such as those developed in this study. The advantage in this approach over others tried in the past is that the profession has the opportunity to approve or disapprove of specific aspects of performance rather than making global judgments in terms of generalities that glitter. Not only does this study isolate the factors of performance, but it also supplies interpretative data so that the profession can see what the factor is related to.

The profession should also address itself to questions concerning priorities in performance. On what should the principal spend most of his time? Where should he put major emphasis? Should he stress

Responding to Outsiders or Maintaining Organizational Relationships? Should he Direct the Work of Others or should he emphasize Exchanging Information? Since some of the factors are essentially incompatible, some choice should be made as to which takes precedence over others.

This study has described the performance of principals in terms of a set of factors. It is now the task of the profession to determine which of the aspects of performance it wishes to promote and those which it would like to diminish. The profession can do this by describing what it conceives to be the good principal. This should be done definitively and with carefully worked out priorities.

Professional Knowledge--The second major task of a profession is to assure its practitioners of a body of knowledge which will enable them to know the consequences of their actions and the rationale for their acts. This is an assertion that a profession has a responsibility for the development and constant appraisal of knowledge of school administration.

The implications of this study for the role of the profession lie in two directions. One the one hand there are implications as regards the nature of the knowledge and on the other is the methodology involved in gaining the knowledge. This study has made a start in determining a body of psychologically oriented knowledge about administrative performance. Such aspects as factors of performance; abilities, interests, and professional knowledge; personality; educational concerns; interaction data; biographical data; and ratings of reference groups have been explored and presented. The profession needs to look at performance in terms of other of the behavioral science frameworks. Performance can be better understood if it is explored in a variety of ways. The responsibility of the profession is to see to it that more comprehensive researches are undertaken so that its body of knowledge is being constantly enlarged and revised.

The methodology of this study is a sharp break with past research. There is no doubt that simulation is highly useful in the study of administrative performance. While the profession should encourage its use, it would do a greater service if it encouraged researchers to develop new methods which might be even more useful. Investigation into administrative performance is still in its infancy and its methodology still needs to be developed.

Professional Skill--The third responsibility for a profession is to improve the skill of its members. The development of professional skill is more urgent in school administration than in many other professions because of the admitted inadequacy of pre-service preparation. Scarcely a yearbook of any of the major educational administration organizations in the past several years has failed to comment negatively on preparation for administrative positions.

Skill in administration has many connotations. It refers to the ability to handle technical, human and conceptual problems at a most practical level. Unfortunately most of the preparation programs "talk about" administration rather than actually immersing students in the life blood of administration. In-service programs have tended to do the same for practitioners. Conventions feature speeches and call only for performance as "sitters" on the part of attendees.

The major implication of this study is that simulation offers an excellent method of teaching skills to administrators. While the use of simulation as an instructional device was not studied, the reaction of the subjects to the technique was enthusiastic and the principals in the study suggested it be used for instruction. While, as indicated above, simulation might well be used in the preparation of administrators it may be more applicable to the in-service education of school principals and superintendents. Much more work needs to be done to use simulation most effectively in instruction and this is the responsibility of the profession.

A Look Ahead

The short section to follow will consider briefly (1) implications of the study for a better scientific theory and (2) future research.

It has been said that there is nothing as practical as a good theory. Progress toward an adequate scientific theory of school administration depends upon the creation of suitable concepts by which empirical observations of events, situations, and processes of administration can be brought into a meaningful order. One important point needs to be stressed. The practice of administration will improve only insofar as the administrator can analyze, understand, and change his manner of performance of his job to correct an error or mistake which he may make and of which he may become aware. Analysis, understanding and effort to change behavior are dependent upon the existence of valid concepts by which specific incidents and events may be recognized as examples of more general classes of events, or as the result of the operation of general principles. Although much of administrative practice may remain an art in which skill develops with experience, it is undoubtedly true that the rate at which one attains skill in the art will be a function of the administrator's ability to learn from experience.

There is reason to question how much the elementary school principal is learning today from either experience in graduate training or on the job. The study reveals little or no substantial relationship between years of administrative experience or years of academic preparation and any measure of performance in the simulated school situation. This state of affairs strongly suggests that those who are practicing school administration as well as those who are teaching it are in dire need of valid concepts by which they may analyze, evaluate, understand and improve performance.

Implication for Theory

It has already been suggested that many of the findings of the study have implication for the development of better theory in educational administration. It is also possible to find suggestions in the study for theories of the function of abilities and personality variables in determining performance of complex tasks. There are implications with respect to scientific methodology, especially as the methods of simulation and factor analysis may be concerned. It is not possible within the scope of this report to treat these implications in other than the most superficial way. No attempt will be made to present a complete theory of administrative performance. An outline of a tentative theory which is based on the major findings of the study is contained in Appendix F. An attempt to formulate a more complete theory as a supplement to an empirical study was considered unwise.

Implications for Future Research

Research is characterized more by its tendency to raise new problems for further research than by its tendency to provide solutions for old problems. Although this study is one of the more comprehensive ones in the area of school administration, it provides no exception to the generalization.

This section of the report notes some implications for future research. Three areas are discussed briefly: (1) the desirability of replicating the study, (2) criterion research, and (3) research on personality.

Replication--There are many reasons why the present study should be replicated that go beyond a general desirability of repeating all research. The most useful replication would require not only that a new group of principals be selected as subjects for study but, also, that a different school situation be developed. Whitman School is but one of an almost infinitely large number of "schools" that might have been simulated. If a different school were selected for a repetition of the study, it would be necessary to create new background materials and new administrative problems (in-basket items, kinescopes, etc.) which would be appropriate in the new school. Replication of the study by using a new group of subjects and a new school situation would provide the opportunity to study the effects of variations in samples of subjects and variation in simulated situations upon the more important findings of the study. The general question to be answered is "To what extent are the dimensions of performance found in this study a function of (1) the specific school situation (e.g., Whitman School), (2) the specific principals studied, or (3) the interaction between the principals and school situation?" The last part of the question, i.e., the possibility of an interaction effect between the characteristics of 232 principals and the characteristics of Whitman School, is of particular significance. The present study suggests that ability and personality characteristics of principals are related to how they perform administrative tasks in at least one school (Whitman), but does not show unequivocally that such relationships would appear if a second or third school situation were involved. No information is provided about the possibility that new dimensions of performance would be found in a different school situation. The simulation technique provides a vehicle for experimental work on effects of situational variables. It would be possible to vary systematically certain aspects of the situation, such as the personality of the superintendent or the type of organization of the school district, and observe the changes in administrative behavior. One very important course for future research in educational administration is to replicate the present study with variations in the sample of subjects and the nature of the school situation.

There is need for "reality" testing of the dimensions of administrative performance found in this study. Do the principals perform their everyday administrative tasks in their real schools in the same manner as they perform comparable tasks in a simulated situation? For example, a check list of dimensions could be prepared with operational definitions based on the appropriate in-basket test scoring categories and a small representative sample from the 232 principals in the original study selected for detailed study. Observers could next visit the schools of these principals to determine the extent to which each principal displayed the same administrative performance in his everyday work as he had exhibited in Whitman School.

The Criterion--The study has implications for future research concerned with the development of criteria of performance in complex situations. If it can be concluded that the dimensions of administrative performance reported in Chapter VII cover significant areas of the work of the elementary principal, a necessary first step toward development of performance criteria has been taken. These dimensions suggest the major areas within which it would be desirable to obtain an appraisal of the individual principal's performance. The study also brings into focus two additional problems relative to criterion development -- (1) the complexity of the criterion and (2) the multiplicity of value questions.

The question "How can we know how well a complex job is being done?" will not be answered in a simple manner. No single over-all measure of quality of performance is likely to be found that will suffice. An answer to the problem of criterion development must provide room for understanding the individual who performs well some part or parts of a complex job, but does less well in the case of some other part or parts.

Despite indications that it will be rare that an individual principal's performance can be described as uniformly "good" or "poor" in each part of his job, it will always be necessary to appraise and select the incumbent individual as an inseparable unit. This implies that most principals likely will be stronger in some areas of performance and weaker in others. Job situations may, likewise, be expected to show variations in the demands that they create for excellence of performance in different areas. This leads directly to the possibility of selecting and placing the principal in a job situation that fits his particular strengths. Thus, the criterion problem in complex situations involves the analysis of job demands as well as the individual's performance.

The present study has in no way contributed to the solution of the problems of describing or measuring differences between administrative situations within which different elementary principals function. The use of simulation as a research approach directly reflects the research staff members' recognition of situational difference, but serves to control rather than to investigate situational differences. Appropriate research that is designed to lead to the determination of the major dimensions of administrative situations (as contrasted with dimensions of administrative performance) in the elementary school is definitely indicated for the future. It may well be that an extended use of simulation would help to solve this problem. A number of situations could be simulated for study while the sample of individuals was held constant.

A question of tremendous importance to administration is "Do the dimensions of administrative performance change with levels of the administration position?" For example, would superintendents, when faced with an appropriate simulation of the superintendent's job, display patterns of administrative performance that require dimensions for their description that differ from the dimensions found for elementary school principals. Similar questions should be raised concerning secondary school principals, school business officials and central office administrators.

The study has shown that the answer one can expect to the question "How effectively is Principal X performing his job?" will depend, in large degree, upon the person being questioned. The principal's superiors, his subordinates, and the patrons of his school will likely give somewhat different answers. This fact, indeed, raises very serious questions with respect to criteria of performance. While findings from the study have added to the understanding of the problem of the judge in evaluating performance, much more research is needed. There are at least two important directions to which such research could be addressed. One direction is to determine the kind and the extent of differences in values or point of view between relevant groups of persons who form judgments about the performance. For example, what precisely are the differences between teachers, on the one hand, and superiors, on the other, with respect to how the excellence of a principal is to be judged? Do the members of these reference groups use different personal values in forming judgments? The second direction of investigation would be concerned with the possibility of differences in what is perceived as the principal's job. The finding of little or no correspondence between the superior's impressions of a given principal and his teachers' impressions may be explained in several ways, but certainly includes one or more of the following:

1. The judges evaluate the same performance differently;
2. The judges consider as relevant, for purposes of evaluation, different types (dimensions) of performance;
3. The judges have different opportunities to observe different areas of performance; or
4. The different research instruments introduce different errors or biases into the reports of the judges.

Other investigators[15] have been concerned with problems of understanding the performance of school administrators in relation to the demands of different reference groups, but much more research of this kind is needed.

Personality--One of the more striking findings of the study is the appearance of many orderly relationships between personality factors and performance of the principals in the complex situations in Whitman School. Such findings were somewhat unexpected in view of the general difficulty of demonstrating relationships between measures of personality variables and job performance which has characterized much past research. Although intuitively it seems necessary that variations in personality should be expressed in job performance, progress toward achieving understanding in this area has been meager. The lack of progress may be due, in part, to methodological problems, which this study has made somewhat clearer.

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[15] For example, see Neal Gross, Ward S. Mason, and Alexander W. McEachern. Exploration In Role Analysis: Studies of the School Superintendency Role, John Wiley & Sons, Inc., New York, 1958, 379 pp.

From the point of view of methodology, if one is interested in determining relationships between personality variables and performance variables, the study suggests that:

1. The performance variables must be relevant; i.e., must permit the expression of personality tendencies;
2. It must be possible to observe and compare performance within a standard situation;
3. Data analysis procedures must be appropriate to the complexity of interrelationships that are expected to be found between variables.

Each of these methodological requirements will be considered in turn. However, it must be pointed out that, first, an assumption will be made that valid techniques for measuring personality tendencies are or can become available; and, second, that there are many problems in personality research which do not fall within the restricted area being discussed here.

The type of performance variable which is relevant to the expression of personality tendencies is likely to be "stylistic" rather than "evaluative." Variables reflecting performance that is highly evaluative are those to which social pressures tend to force conformity and, hence, restrict the possibility for expression of individual differences. If the measure of the variable is one involving a large amount of evaluation, and is at the same time obtained in a manner which entails a judgment by an observer, it is likely that the measure will be contaminated to reflect both (1) the facts of the performance, and (2) the value frame of reference of the observers (e.g., teachers, superiors, and outsiders did not agree about the over-all quality of the principals' performance).

The dimensions *Compliance with Suggestions Made by Others*, *Organizing Future Work* and *Maintaining Organizational Relationships* are examples of "stylistic" performance variables that were found in the present study to show definite relationships with measures of personality factors. These dimensions of performance are not readily coordinated with the evaluation continuum ranging from "good" to "bad." An excess of any one of these performance factors might be considered undesirable, as might a deficiency. Different judges are likely to evaluate the three dimensions of performance quite differently. The principals, therefore, may find an opportunity to express personality tendencies in these areas. In fact, the study results are definitely in the direction which previous empirical and theoretical work in the area of personality might have predicted. The pattern of results shows that Complying with Suggestions Made by Others can be identified with the general personality characteristics described by Witkin[16/] and others as "field independence." Maintaining Organizational Relationships appears to be related to a well-known general personality characteristic "introversion-extroversion" which has recently appeared as a second-order factor in Cattell's work.[17/] The dimension Organizing Future Work shows a pattern of relationship with personality scores reflecting anxious, compulsive tendencies. This pattern has also been recognized by Cattell as a second-order personality factor.

One major difficulty that has faced personality research concerned with relationships between personality tendencies and performance of complex, real-life tasks has been that of making suitable real-life observations. It seems clear that not every real-life situation will provide opportunities for the expression of any or all personality tendencies. Behavior, as seen by an observer in real life, and about which he makes inferences concerning an individual's performance, is a function of both the situation and the person. An observer's observation in real life will be contaminated in very complex ways by the mixture of situational and personal variables which enter into the behavior he observes. Clearly, personality research in the area under discussion could be expected to progress more rapidly

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[16/] Witkin, H. A. "The Perception of the Upright." Scientific American, Vol. 200, No. 2. February 1959, pp. 50-56.

[17/] Cattell, Raymond B., op. cit.

if performance could be observed in a situation of sufficient complexity to permit the expression of personality tendencies, but which, at the same time, could be controlled in a manner which provided the same opportunity to display personality tendencies for all individuals under study. Simulation, as used in the present study, can provide such a standard situation.

Without elaborating, it appears that both the personality tendencies and performance variables that are involved in a reasonably complex job situation (or an adequate simulation of such a situation) are likely to be numerous. The variables are also likely to interact with one another in a manner that obscures their basic relationships. It follows that the procedures of analysis of data obtained in such situations should be sufficiently sophisticated to reveal the basic underlying order that may exist.

The foregoing suggestions for directions of future research are in no way exhaustive. They demonstrate the tentative and limited character of research findings, even those from relatively ambitious investigations. They emphasize the size of the task that remains in the search for an understanding of administrative performance.

APPENDIX A

A Bibliography of Selected Studies of School Administrator Qualifications and Selection Criteria

CHRONOLOGICAL SELECTED BIBLIOGRAPHY OF SCHOOL ADMINISTRATOR QUALIFICATIONS AND SELECTION CRITERIA

1839

Tenth Annual Report of the Common Schools of Cincinnati. Cincinnati, Ohio, 1839, as cited by Shelton, W. F. "A Basis for the Selection of Elementary Principals: A Comparison of a Standard with Practice in the Field." M.A. Thesis. Canyon: West Texas State Teachers College, 1940. 122 pp. Typewritten.

1873

Binford, J. H. An address, no title, The Addresses and Journal of Proceedings of the National Education Association, Session of the Year 1873, at Elmira, New York. Peoria, Illinois: The Association, 1873. p. 248-252.*

1880

Adams, C. F., Jr. "The Development of the Superintendency." NEA Proceedings, 1880. p. 61-76.

1900

Gorton, C. E. "The Superintendents in Small Cities." NEA Proceedings, 1900. p. 222-229. (OS1)**

Gove, Aaron. "The Trail of the City Superintendent." NEA Proceedings, 1900. p. 214-222.

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* Since the name and imprint of this publication has changed several times since 1873, the reader is advised to look for these early volumes under the more recent title: National Education Association. Addresses and Proceedings of the Ninety-Fifth Annual Meeting Held at Philadelphia, Pennsylvania, June 30-July 5, 1957. Washington, D.C.: The Association, 1957. Volume 95; for instance. Hereafter in this bibliography, these publications will be identified simply as NEA Proceedings, (date), as in the 1880 citation above.

** The code symbols appearing after certain bibliographic entries identify those used as sources of the recommended qualifications being studied. OS identifies an opinion source dealing with the superintendent, OP would identify an opinion source dealing with the principal. RS would identify a research source dealing with the superintendent and RP would identify a research source dealing with the principal.

1901

Peres, I. H. "What Constitutes an Efficient Superintendent." NEA Proceedings, 1901. p. 825-828. (OS2)

1906

Suzzallo, Henry. The Rise of Local Supervision of Schools in Massachusetts. Contributions to Education, No. 3. New York: Bureau of Publications, Teachers College, Columbia University, 1906. 154 pp.

1912

Dutton, S. T. and Snedden, David. The Administration of Public Education in the United States. New York: The Macmillan Co., 1912. (OS4)

1913

Chamberlain, Arthur H. "The Growth of Responsibility and Enlargement of Power of the City School Superintendent." Ph.D. Dissertation. Berkeley: University of California, 1913. 158 pp. Typewritten, as cited in Smith, Rulon. "The Selection of the Chief Executive Officer of the Public Schools." Ed. D. Project Report. Berkeley: University of California, 1937. 203 pp. Typewritten.

1915

Cubberly, E. P. "Superintendent of Schools." Elementary School Journal, 16:147-154, November, 1915. (OS3)

Deffenbaugh, W. S. School Administration in the Smaller Cities. U. S. Bureau of Education, Bulletin 1915, No. 44. Washington, D.C.: Government Printing Office, 1915. 81 pp. (RS1)

1917

Theisen, W. W. The City Superintendent and the Board of Education. Contributions to Education, No. 84. New York: Bureau of Publications, Teachers College, Columbia University, 1917. 137 pp.

1921

McClure, Worth. "Professionalizing the Principalship." Elementary School Journal, 21:735, June 1921.

1922

Corson, D. B. "The Elementary School Principal from the Viewpoint of the Superintendent." NEA Proceedings, 1922. p. 852-860. (OP1)

Cubberly, E. P. Public School Administration. New York: Houghton Mifflin Co., 1922. 479 pp.

1922 (Cont'd)

Deffenbaugh, W. S. *Administration of Schools in Smaller Cities*. U. S. Bureau of Education, Bulletin 1922, No. 2 Washington, D.C.: Government Printing Office, 1922. 75 pp.

Johnston, C. H., Newlon, Jesse, and Pickell, F. G. *Junior-Senior High School Administration*. New York: Charles Scribner's Sons, 1922. 399 pp. (OP2

Morrison, J. Cayce. *The Legal Status of the City Superintendent of Schools*. Baltimore: Warwick & York, 1922. 162 pp.

1923

American Association of School Administrators. *The Status of the Superintendent*. First Yearbook. Washington, D.C.: The Association, 1923. 175 pp. (RS3)

1924

Deffenbaugh, W. S. "Selection of the Superintendent." *American School Board Journal*, 68:36, June, 1924.

Gist, A. S. "The Evaluation of the Principalship." *Status and Professional Activities of the Elementary School Principal*. Third Yearbook. National Education Association Department of Elementary School Principals. Washington, D.C.: The Department, 1924. p. 205-215. (OP3)

Koos, L. V. *The High School Principal*. New York: Houghton Mifflin Co., 1924. 121 pp. (RP1)

1925

Anderson, W. N. *Manual for School Officers*. New York: Century Co., 1925. 383 pp. (OS5)

Chancellor, W. E. "On Selecting School Superintendents." *American School Board Journal*, 71:37-38, July, 1925. (OS6)

Pollich, R. E. T. "Superintendents Standards and Policies in the Selection, Appointment and Promotion of Elementary School Principals." *The Elementary School Journal*, 7:107-111, October, 1925. (RP2)

1926

Morrison, R. H. "Qualities Leading to Appointment as School Supervisors and Administrators." *Educational Administration and Supervision*, 12:505-511, November, 1926. (RS4)

Johnson, L. E. "Selecting the School Superintendent in Texas." *Texas State Teachers Association Research Bulletin*. November, 1927. p. 1-9.

1927

Longshore, W. T. "Report of the Committee on Standards and Training for the Elementary-School Principalship." NEA Proceedings, 1927. p. 444-446. (RP3)

Roberts, A. C. and Draper, E.M. The High School Principal. New York: D. C. Heath & Co., 1927. (OP 4)

Searson, J. W. "Selecting Superintendents and Principals." American Education Digest (Now called School Executive), 46: 245-247, February, 1927.

1928

Beveridge, J. H. "The Qualifications of the Professional Superintendent of Schools." NEA Proceedings, 1928. p. 747-754. (OS7)

Foster, H. H. High School Administration. New York: Century Co., 1928. 665 pp. (OP5)

Gist, A. S. The Administration of an Elementary School. Oakland; Charles Scribner's Sons, 1928. 306 pp. (OP6)

National Education Association Department of Elementary School Principals. The Elementary School Principalship. Seventh Yearbook. Washington, D.C.: The Association, 1928. p. 367-390. (RP4)

Sayre, William. "The Basis of Selection of the Superintendent of Schools." M.A. Thesis. Iowa City: Iowa State University, 1928. 73 pp. Typewritten. (RS5)

1929

Childs, R. C. "Requirements for Administrative Positions in the Southern States." M.A. Thesis. Nashville: George Peabody College for Teachers, 1929. Typewritten.

Ford, W. S. "Relation of the Board of Education to the Staff." American School Board Journal, 79: 35-37, November, 1929. (OS8)

Lide, E. S. "Personality Traits of School Administrators." Educational Research Bulletin, 8: 142-143, April, 1929. (RP5)

Melby, Ernest O. "A Problem in the Training and Selection of the Superintendent of Schools." American School Board Journal, 79: 38, November, 1929.

Reeder, W. G. "The Needed Qualifications of a Superintendent." School Executive, 49: 115-119, November, 1929. (OS9)

Stone, C. R. Supervision of the Elementary School. New York: Houghton Mifflin Co., 1929. 573 pp.

1929 (Cont'd)

Strayer, George D. "Rise of Public School Administration." *School Executive*, 49:14, September, 1929. (OS10)

1930

Ayer, Fred C. "The Duties of Public School Administration XI." (last of a series of articles) *American School Board Journal*, 80:43-44, May, 1930.

Broome, E. C. "What Attributes Contribute Most to a Superintendent's Success?" *Nations Schools*, 5:21-24, May, 1930. (RS6)

Foster, K. F. *Status of the Junior High School Principal*. U. S. Office of Education, Bulletin 1930, No. 18. Washington, D.C.: Government Printing Office, 1930. 75 pp. (RP6)

Gist, A. S. "Personnel Problems of the Principal." *NEA Journal*, 1930. p. 177-178. (OP7)

Gosling, T. W. "What Qualifications Best Fit the Superintendent for his Job?" *Nations Schools*, 6:37-39, August, 1930. (OS11)

MacDonald, Marion E. "The Significance of Various Kinds of Preparation for Elementary School Principals." Ed. D. Project Report. New York: Teachers College, Columbia University, 1930. 104 pp. Typewritten. (RP7)

Pratt, O. C. "Getting an Executive Position." *American School Board Journal*, 80:48, March, 1930.

Weber, O. F. *Problems in Public School Administration*. New York: The Century Publishing Company, 1930. 726 pp.

1931

Conrad, C. W. "Seeking the Superintendent." *School Executive*, 50:570, August, 1931.

Engelhardt, Fred. "Selecting the Superintendent." *American School Board Journal*, 82:37-38, April, 1931.

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APPENDIX B

List of School Principals Who Served as Test Subjects

ELEMENTARY SCHOOL PRINCIPALS WHO SERVED AS TEST SUBJECTS

ALLENTOWN, PA.

Charles C. Harmany
Dorothy P. Hartman
Paul R. Kramer
Florence E. Mock
Otis J. Rothenberger
Mary Turczyn
Robert Unser
Mary E. Wagner
Robert Welliver
Paul M. Heager

ANN ARBOR, MICH.

Marion Cranmore
Ethel Hedrick
Leonard B. Hoag
Hazel Jungquist
Margaret Matteson
Robert H. Nichols

BALTIMORE, MD. (1st Week)

Winifred E. Barrett
Ella Beall
Vivian I. Cord
Genevieve Emerine
Elizabeth B. Fox
Ruby Grooms
Leroy Hardesty
Elizabeth Hartje
Mary Horsey
Neubert Jaffa
Harold Katz
Kathaleen Kennedy
Winifred Kinn
Lydia R. Lutz
Elizabeth K. Mayer
Clifton S. Murray
Rolena C. Neels
Mildred B. Pierson
Viola Smith
Mildred E. Tyson
S. Reginald Watts

BALTIMORE, MD. (1st Week Continued)

Henry N. West
Thomas J. Wheaden

BALTIMORE, MD. (2nd Week)

Pearl Brackett
Emma Bright
Mary Brooks
Jack Epstein
Mildred Fowler
Edward Gersuk
Evelyn Girardin
John Graybill
Ellen Griffiths
Elizabeth Guerin
Rosella Herman
Viola Jackson
Margaret Pabst
Blanche Powell
Clarence Roberts
Goldie Schimmel
Marguerite Schmidtmann
George Schwarzman
Dallas Smith
Marguerite Smith
Elizabeth Storm
Maud Williams

BENNINGTON, VT.

Ruth B. Bodine
Margaret P. Griswold

BERKELEY, CALIF.

John Horning
Jack K. McFarland
Art Shearer
Orville J. Sipe
Thomas H. Smith

BRONXVILLE, N. Y.

Ursula Henley

CONCORD, MASS.

James McMullen
J. Wendell Warren

CONCORD, N. H.

Elsie P. Brooks
Dorothy D. Guimond

DENVER, COLO.

Leta Arnold
Carl F. Barnhart
Veronica E. Casey
Hazel Chambers
Lloyd N. Corson
Ray K. Easley
Edythe R. Goldman
Irene M. Gunkle
Walt Humphrey
Lindsey D. Keeler
Grace G. Kimmel
Ben Z. Krim
Ethel H. Lundin
Robert G. Price
Ray R. Rebrovick
Mary Neel Smith
Luke G. Terry
R. W. Ullemeyer
Mary E. Waterhouse
William W. Wills

EAST PROVIDENCE, R. I.

George H. Blackwell, Jr.
Helen Bush

GLOUCHESTER, MASS

Edmund E. Dodge
Glen R. White

GREECE, N. Y. CENTRAL SCHOOL DIST.

Warren H. Hewes
Frank M. Schrader

HILLSBOROUGH, FLA.

C. R. Allgood
Edwin G. Artest
David E. Bailey

HILLSBOROUGH COUNTY, FLA.
(Continued)

Vera Byrd
Elizabeth Cone
John B. Cox
Geraldine Groasdell
E. J. DeVane
Edna Erwin
Joseph L. Fearing
Aurelio Fernandez
Harry Gaventa
William Earl Hall
Anne Horrell
Percy A. Jenkins
William H. Kay
Ethel W. Kelley
John Lockhart
Don McClain
Harry Molz, Jr.
Jean Patrick
Bennie L. Sampley
Joseph V. Sheehy
J. M. Stowers
Josephine Windham

JACKSON, MICH.

Edward R. Cork
Ethel Green
Francis Robert Lower
Genevieve Olsen
Carrie Sissala
William A. Warnock

LANSING, MICH.

Hazel C. Christenson
Ella Hasse
J. E. Hays
Margaret I. Knapp
Mrs. Georgia L. Mead
Frances Sauber
Darene T. Sessions
Harold R. Wood

LEON COUNTY, FLA.

Wallace H. Burgess
Raymond Fields, Jr.
W. S. Seabrooks
George Williams
Luther H. Williams

LYNN, MASS.

Alice Hartnett
Alfred H. Rousseau
S. Edward Weinswig

MANCHESTER, N. H.

Michael Murphy
Rolland Perry

MODESTO, CALIF.

Phil Line
Alberta Martone
Samuel Renteria
Lester Tooker
Eva Wylde

MT. DIABLO UNIFIED SCHOOL DISTRICT CONCORD, CALIF.

Leonard R. Baxter
Robert Lovejoy
Robert Reasoner
Lloyd Teel
Wiley R. Martin

NEW BRITAIN, CONN.

Winnie Clark
Ellen Kennedy

OKLAHOMA CITY, OKLA.

Floyd F. Alexander
Eldon Clay Baber
Ralph A. Borah
Vernon T. Brewer
Delbert Burnett
R. C. Crews
Lloyd M. Estes
W. L. Geis
Jacks Gibson
George T. Glover
Hazel Kibler
L. S. Lanman
A. J. Lonian
Lena McKee
Myrtle McNatt
Earl Martin
Mary Elizabeth Moulder

OKLAHOMA CITY, OKLA. (Continued)

Carl C. Ruble
J. Otis Scott
Francis C. Thomas

ORANGE COUNTY, FLA.

Felix E. Cosby
George W. Fort
William S. Maxey
W. V. Nixon

PINELLAS COUNTY, FLA.

Frederick D. Burney
John H Hopkins
Louis W. McCoy
William G. Thompson
O'Cain J. Thumbtzen

PORTLAND, MAINE

Frederick Jeffery
Eleanor Sanborne

SAN RAFAEL, CALIF.

Edwina Codoni
Harold Delma
Lawrence Geiger
Homer E. Hoyt
William M. Sewell

SMITHTOWN, N. Y. CENTRAL SCHOOL DISTRICT

William van der Meulen
Phillip L. Smith

TACOMA, WASHINGTON

Alfred A. Actor
Ralph Baird
Harry A. Erickson
Otis J. Grande
Richard G. Hagerty
C. Wilfred Jewell
Leif C. Klippen
Ruth N. McConihe
William D. Melville
Leslie A. Nelson

TACOMA, WASHINGTON
(Continued)

E. Goodwin Olson
Dale E. Overfield
Myrlin N. Parker
Harold G. Peterson
Mrs. Hazel H. Pflugmacher
G. E. Ramsey
Charles F. Totten
Mrs. Ruth Trosper
Ingval M. Ulberg
Donald E. Williams

TARRYTOWN, N. Y.

James Mitchener

UNIONDALE, N. Y.
(Northern Parkway School)

Stewart A. Linden

WARWICK, R. I.

Doris Bettez
Margaret A. Haley

WILLOUGHBY, OHIO

Edna Benson
Ward W. Carhart
Marguerite Haag
Genevieve Harrison
Edward Hope
Lenora D. Logan
Wilbur S. Miller
Charles Ness
Albert Lee Sanford
Philip Wright

APPENDIX C

Advisory Committees

NATIONAL ADVISORY COMMITTEE

Mr. Arthur L. Benson, Director
Teacher Examination
Educational Testing Service
20 Nassau Street
Princeton, New Jersey

Dr. H. M. Elliott
Director of Research
Oakland Public Schools
1025 Second Avenue
Oakland 6, California

Dr. Jay Greene
The Board of Examiners
110 Livingston Street
Brooklyn 1, New York

Dr. Andrew W. Halpin, Director
Bureau of Educational Research
State College of Education
University of Utah
Salt Lake City, Utah

Dr. Vynce Hines
College of Education
University of Florida
Gainesville, Florida

Dr. George Holloway
School of Education
University of Buffalo
Buffalo, New York

Dr. O. W. Kopp
Department of Elementary School Principals
National Education Association
1201 Sixteenth Street, N. W.
Washington 6, D. C.

Dr. Richard Lonsdale
School of Education
University of Syracuse
Syracuse, New York

Mr. E. N. Luce
National School Boards Association, Inc.
450 East Ohio Street
Chicago 11, Illinois

Dr. Hollis Moore
American Association of School Administration
1201 Sixteenth Street, N. W.
Washington 6, D. C.

Dr. Kenneth E. McIntyre
Executive Director
School Principalship Project
The University of Texas
Austin 12, Texas

Dr. Harold J. McNally
Professor of Education
Teachers College
Columbia University
New York 27, New York

Dr. Kenneth E. Oberholtzer
Superintendent of Schools
Denver Public Schools
414 Fourteenth Street
Denver 2, Colorado

Mr. Ellsworth Tompkins
Executive Secretary
National Association of Secondary School Principals
1201 Sixteenth Street, N. W.
Washington 6, D. C.

Dr. Richard Wynn
Associate Professor of Education
Teachers College
Columbia University
New York 27, New York

PRINCIPALS ADVISORY COMMITTEE

Mr. Harold Ahlquist
Elementary Principal
Hastings-on-Hudson, New York

Mr. Al Atwan
Elementary Principal
Saddle Rock
Great Neck, New York

Mr. Joseph Azzarelli
Educational Administration
Teachers College
Columbia University
New York 27, New York

Miss Winifred Barry
Elementary Principal
Board of Education Building
Oceanside, New York

Mr. James Collins
Superintendent of Schools
Rye, New York

Mr. John Ether, Principal
Westmere Elementary School
Albany, New York

Mr. Jack Freck
Lakeville School
Great Neck, New York

Mr. W. George Hayward
Asst. Supt. of Schools
East Orange, New Jersey

Mr. William Mahoney
Elementary Principal
Dryden Street School
Westbury, New York

Dr. Lyle Morris, Principal
East Hill School
Roslyn, New York

Miss Ann Morrisey
Elementary Principal
Locust Valley, New York

Dr. Edward Murphy
Elementary Principal
Linbrook, New York

Mr. John O'Brien
Asst. Superintendent of Schools
Ridley Township, Pennsylvania

Dr. Guy Quinn
Conn. Farms School
Union, Union County, New Jersey

Mr. George Raab, Principal
Heathcoat School
Scarsdale, New York

Miss Pearl Rosenstein, Principal
Barnard Laboratory School
New Haven, Connecticut

Mr. Paul Rossey
Elementary Principal
Dobbs Ferry, New York

Miss Ann Ruddy, Principal
Public School #125
123rd Street
New York, New York

Mr. Richard T. Sawyer
Coordinator of Instruction
Goshen, New York

Mrs. Maria Scian
Elementary School Supervisor
Westfield Public Schools
Westfield, New Jersey

Mrs. Daniel Sheehan
75 Nichol Avenue
New Brunswick, New Jersey

PRINCIPALS ADVISORY COMMITTEE (CONT'D)

Mr. Willard Smith, Principal
Ridge Street School
Rye, New York

Mr. Dudley Snyder
Elementary Principal
Valley Stream, New York

Martha Sternal, Principal
Seeley Place School
Scarsdale, New York

Mr. Nathan Stoller
Elementary Principal
Plainfield, New Jersey

APPENDIX D

Differences between Men and Women Principals on 137 Variables Employed in the Study

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)			.01
	Mean	Std. D.	Mean	Std. D.	Diff.	Sign .05
In Basket Categories (A, C and D)						
Asks Subordinates	14.45	7.82	17.83	7.79	3.38	.01
Informs Subordinates	19.96	6.46	21.35	6.50	1.39	
Discusses with Subordinates	27.47	9.89	29.56	10.36	2.09	
Communicates Face-to-Face	45.24	13.39	46.44	11.45	1.20	
Decides on Procedure	41.88	11.54	44.13	11.30	2.25	
Concluding Decision	65.19	11.25	62.42	11.71	-2.77	
Follows Subordinates	28.02	5.23	28.60	4.80	.58	
Terminal Action	41.19	10.42	37.86	9.81	-3.33	.05
Program Values	6.42	4.50	6.80	4.82	.38	
Conceptual Analysis	10.56	6.90	12.08	7.16	1.52	
Superiors Involved	15.47	4.40	14.77	5.16	- .70	
Discusses with Superiors	12.00	4.53	13.02	5.05	1.02	
Outsiders Involved	37.86	7.89	39.28	7.71	1.42	
Relates to Other Materials	16.70	7.19	17.46	6.69	.76	
Immediate Work Scheduled	15.55	6.73	16.16	7.76	.61	
Intermediate Work Scheduled	10.98	7.37	12.80	7.45	1.82	
Informs Outsiders	10.77	4.42	10.95	3.79	.18	
Follows Outsiders	21.50	3.85	21.79	4.10	.29	
Leading Action	42.58	15.27	40.63	14.38	-1.95	
Courtesy to Subordinates	24.42	14.29	23.69	12.62	- .73	
Directs	51.79	14.59	51.45	12.40	- .34	
Careless	5.92	5.26	6.93	5.62	1.01	
Delays	9.56	6.72	9.59	7.32	.03	
Informality to Subordinates	14.55	14.70	11.36	11.95	-3.19	

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)			
	Mean	Std. D.	Mean	Std. D.	Diff.	Sign
Number of Words	324.96	50.06	338.93	49.10	13.43	.05
Recognition for Good Work	2.67	1.90	2.92	2.27	.25	
Prejudges	2.77	1.76	2.77	1.79	.00	
Human Values	2.93	2.28	3.08	2.32	.15	
Controlled Delegation	1.08	1.38	1.24	1.38	.16	
Uncontrolled Delegation	2.82	2.90	2.98	2.73	.16	
Sets Deadline	.74	1.03	1.05	1.21	.31	.05
Basic Mental Abilities						
Deduction	22.38	6.92	18.85	5.58	-3.53	.01
Induction	11.49	4.18	11.24	2.94	- .25	
Number Facility 1	39.04	11.60	43.93	10.42	4.89	.01
Verbal Knowledge	21.32	7.54	24.05	6.84	2.73	.01
Speed of Closure 1	21.80	6.68	22.93	5.22	1.13	
Associate Memory 1	7.65	4.35	6.93	4.80	- .72	
Number Facility 2	48.42	15.19	56.33	14.81	7.91	.01
Flexibility of Closure	57.33	26.19	47.97	21.25	-9.36	.01
General Reasoning	10.13	3.78	8.80	3.17	-1.33	.01
Visualization	13.66	5.39	11.63	4.45	-2.03	.01
Speed of Closure 2	11.63	4.30	10.57	3.58	-1.06	.05
Word Fluency	41.43	9.86	43.22	9.54	1.79	
Expressional Fluency	8.16	3.52	8.60	3.06	.44	
Ideational Fluency	52.73	13.35	56.03	13.09	3.30	
Associational Fluency	13.64	5.25	14.40	3.71	.76	

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)		Diff.	Sign.
	Mean	Std. D.	Mean	Std. D.		
Professional and General Knowledge						
Administration and Supervision	49.17	15.24	50.91	14.09	1.74	
Elementary Education	54.36	16.76	61.71	13.01	7.35	.01
Social Studies	24.42	11.92	23.36	9.45	-1.06	
Science and Mathematics	20.15	8.65	14.81	6.82	-5.34	.01
Background Total Achievement						
Background Achievement	45.93	10.36	43.00	9.66	-2.93	.05
Personality Factors						
A. Friendly	20.56	5.69	21.64	4.57	1.08	
C. Emotional Stability	32.43	4.95	31.85	5.45	- .58	
E. Dominance	24.01	5.22	21.03	5.53	-2.98	.01
F. Enthusiastic	22.46	6.16	20.93	6.22	-1.53	
G. Character Strength	25.33	4.65	25.01	5.13	- .32	
H. Adventurous	29.12	8.77	26.80	8.54	-2.32	.05
I. Emotionally Sensitive	21.53	4.20	24.86	3.45	3.33	.01
L. Suspicious	14.12	5.02	12.28	4.96	-1.84	.01
M. Non-Conventional	20.26	4.41	23.59	4.75	3.33	.01
N. Sophistication	23.04	4.17	20.72	3.90	-2.32	.01
O. Insecurity	18.74	5.87	19.11	5.82	.37	
Q_2 Self-Sufficient	17.49	4.95	16.94	4.69	- .55	
Q_3 Will Control	22.73	4.75	22.68	4.72	- .05	
Q_4 Nervous Tension	22.35	7.23	21.28	7.87	-1.07	

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)		Diff.	Sign
	Mean	Std. D.	Mean	Std. D.		
Background Orient. Categories						
Pupil Education	.93	1.22	1.49	1.46	.56	.01
Community Concerns	1.53	1.31	1.64	1.57	.11	
Strong Vocational Int. Blank						
Psychologist	332.99	49.82	339.87	51.91	6.88	
Policeman	319.37	49.95	263.72	47.65	-55.65	.01
Public Administration	356.92	28.45	339.32	30.78	-17.60	.01
City School Superintendent	379.33	35.23	390.24	32.82	10.91	.05
Lawyer	304.31	42.15	312.75	36.47	8.44	
Instr. Awareness Categories						
Objectives	4.91	2.56	6.93	3.20	2.02	.01
Evaluation	6.27	2.49	7.72	2.38	1.45	.01
Planning	8.13	3.16	10.09	2.84	1.96	.01
Curriculum	6.87	2.43	8.26	2.27	1.39	.01
Participation	12.63	1.77	13.49	1.31	.86	.01
Interest	13.55	1.30	14.10	.86	.55	.01
Growth	6.05	1.97	7.33	2.28	1.28	.01
Methods	12.88	1.48	13.20	1.27	.32	
Materials	8.30	3.49	9.69	3.16	1.39	.01
Personality	13.93	1.00	14.23	.70	.30	.01
Classroom	6.39	3.02	6.34	2.56	- .05	.01
Climate	10.90	1.44	11.71	1.40	.81	.01

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)		Diff.	Sign
	Mean	Std. D.	Mean	Std. D.		
Job Performance Values						
Instruction	10.64	2.06	11.72	1.76	1.08	.01
Pupils	11.11	1.73	12.26	1.71	1.15	.01
Employees	10.64	1.85	11.19	1.69	.55	.05
Physical	10.19	2.00	10.53	1.67	.34	
Structure	10.00	2.21	10.66	2.09	.66	.05
Public	11.52	1.79	11.92	1.70	.40	
Group Interaction Categories						
Frequency of Interaction	46.56	19.10	40.97	16.33	-5.59	.05
Gives Positive Information	8.07	5.22	8.31	4.86	.24	
Asks for Information	2.09	2.38	2.12	2.36	.03	
Suggests Procedures	1.65	1.81	1.09	1.61	- .56	.05
Presents Facts Effectively	5.16	2.77	4.85	3.05	- .31	
Makes Decisions Effectively	4.99	2.81	4.93	2.96	- .06	
Amount of Talking	5.31	2.86	4.52	2.73	- .79	.05
Attempts to Influence	5.43	2.88	4.39	2.75	-1.04	.01
Biographical Information						
Total Experience	17.31	8.57	28.93	7.42	11.62	.01
Administrative Experience	9.45	6.77	13.21	8.28	3.76	.01
Academic Preparation	5.86	.78	5.57	1.21	- .29	.05
Age	43.18	7.81	51.59	6.39	8.41	.01

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)		Diff.	Sign
	Mean	Std. D.	Mean	Std. D.		
Superiors' Ratings						
Interest in Work	4.16	.66	4.38	.67	.22	.05
Sticking to a Job	3.97	.67	4.16	.65	.19	.05
Getting along with Teachers	3.84	.73	3.81	.80	- .03	
Getting along with Parents	3.84	.70	3.80	.76	- .04	
Getting along with Supervisors	3.82	.71	3.96	.76	.14	
Knowledge of Administration	3.50	.67	3.78	.80	.28	.01
Knowledge of Teaching	3.09	.83	3.80	.97	.71	.01
Rapport with Children	4.27	.63	4.17	.57	- .10	
Written Communication	3.47	.59	3.74	.64	.27	.01
Understanding	3.60	.71	3.77	.78	.17	
Oral Communication (Informal)	3.56	.56	3.65	.70	.09	
Over-all Impression	3.73	.80	4.04	.83	.31	.01
Teachers' Questionnaire Scores						
Consideration	460.46	47.76	450.25	62.40	-10.21	
Initiating Structure	413.14	45.25	438.49	41.67	25.35	.01
General Reaction	637.45	65.66	648.51	77.15	11.06	
Staff Members' Ratings						
Over-all Impression	4.70	1.84	4.66	1.84	- .04	
In Basket Scorers' Ratings						
Over-all Impression	30.03	5.01	30.43	4.91	.40	

Differences between Men and Women Principals on 137 Variables

Variable	Men (N=137)		(Women N=95)		Diff.	Sign
	Mean	Std. D.	Mean	Std. D.		
Speech Categories*						
Length	7.45	2.35	6.21	2.54	-1.24	.01
Introduction	2.90	.67	3.01	.69	.11	
Organization	2.80	.84	3.11	.82	.31	.01
Conclusion	1.12	.40	1.30	.49	.18	.01
Word Usage	1.98	.34	2.23	.30	.25	.01
Clarity	1.38	.30	1.56	.29	.18	.01
Voice Control	.89	.23	.96	.27	.07	.05
Voice Interest	1.84	.38	1.91	.44	.07	
Pronunciation	1.21	.27	1.36	.23	.15	.01
Efficiency	1.48	.33	1.52	.35	.04	
Composite Scores						
A. Exchanging Information	27.26	9.22	31.84	9.49	4.58	.01
B. Discussing before Acting	93.72	25.80	99.88	24.46	6.16	
C. Complying with Suggestions	106.66	18.42	100.88	18.39	-5.78	.05
D. Analyzing the Situation	13.00	8.59	14.68	9.06	1.68	
E. Maintaining Relationships	84.34	17.78	89.84	20.28	5.50	.05
F. Organizing Work	22.65	10.84	25.20	12.03	2.55	
G. Responding to Outsider	34.22	7.84	34.47	7.52	.25	
H. Directing Others	87.16	18.46	91.06	18.20	3.90	

* n = 131 men and 86 women

APPENDIX E

Over-All Relationships Among the Major Areas of the Study

Over-All Relationships
Among the Major Areas of the Study

In Chapter XIII the relationships among the various variables developed in the study were viewed from a framework provided by the factor analysis of in-basket test performance. This procedure is justified in view of the central position of the in-basket test situation within the entire study. Nevertheless, such a choice of point of view or framework is an arbitrary one, since it would have been possible to select any one of the other major areas of the study for this same purpose. For example, the five factors in the ratings made by the superiors of the principals (described in Chapter XI) might have been used in the analysis in a manner paralleling the use that was made of the in-basket test factors. The choice of the factors in in-basket test performance as the framework for the understanding of other variables is only one of the many possible points from which the data of the study can be viewed.

In this appendix, the over-all relationships between the various major areas of the study (i.e., in-basket performance, basic mental ability test performance, superiors' ratings, etc.) will be examined. The factor analysis described at the beginning of Chapter XIII provides the data for this analysis.

Rotation to Simple Structure

The orthogonal factor loadings of the 120 variables on the 15 factors (see Table XIII-2) were rotated objectively to simple structure by use of a high-speed computer. The criterion used in the rotation has been called "biquartimin"1/ and is a special case of a more

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1/ Carroll, John B. "Biquartimin Solution for Rotation to Oblique Simple Structure." Science. 1957, 126, p. 1114-1115.

general "oblimin" criterion[2] which allows oblique rotation of axes and minimizes two expressions both of which are important in the definition of simple structure. One of the two expressions minimizes the sums of cross-products of squared factor loadings to attain low factor complexity. The other expression makes each column of factor loadings maximally different from every other column by minimizing the sums of the covariances of squared factor loadings, thus maximizing the differences between factors with respect to factor composition. In the "biquartimin" case which was used in the rotations reported here, minimizing each of the two expressions was given equal weight in determining the desired transformation matrix.

Table E-1 presents the transformation matrix which was computed and used to make the rotations.

The complete oblique factor matrix which was obtained by multiplying the orthogonal factor matrix presented earlier as Table XIII-2 by the above transformation matrix will not be presented. The loadings from that matrix that are significant for the interpretation of the 15 factors (A through O) will be reported as these factors are presented. The over-all results of the machine rotation can be described as extremely satisfactory as is indicated in part by the fact that 73 percent of the loadings are within the ±.10 hyperplanes.

The 15 factors obtained will be presented and discussed one at a time. All loadings of ±.25 or larger will be considered for interpreting each factor.

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[2] Carroll, John B. Solution of the Oblimin Criterion for Oblique Factors. Unpublished paper. 1958.

TABLE E-1. FINAL TRANSFORMATION MATRIX

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
I	-.36	.21	-.12	.03	-.13	-.11	.03	-.09	-.16	-.09	-.01	-.02	.01	-.16	-.17
II	.42	.67	-.07	.05	.10	.04	.04	-.03	.07	-.05	.05	-.07	-.24	-.11	-.11
III	.07	-.52	-.21	.15	.00	.19	-.13	-.06	-.12	-.03	.06	.11	-.35	-.07	-.22
IV	-.05	.14	.19	.28	-.37	.36	-.24	.12	-.04	-.28	-.14	-.07	.04	.19	-.02
V	.33	.07	.05	-.06	-.37	-.32	-.17	-.11	-.54	.06	-.10	.03	-.10	-.02	.41
VI	-.25	.35	-.10	.17	.09	.35	-.27	-.16	.12	.19	.02	.35	.03	-.11	.33
VII	.15	-.07	.27	-.11	-.38	.36	.60	-.27	-.07	.06	.02	.05	.03	-.31	-.08
VIII	.34	-.16	.17	-.03	-.09	.01	-.43	.06	-.02	.11	-.06	-.08	.09	-.78	-.08
IX	.13	-.11	-.47	-.17	-.31	-.04	-.07	-.42	.55	-.31	-.17	-.12	-.14	-.05	.30
X	.10	-.04	-.60	-.08	.03	.30	.29	.56	-.22	.04	.01	-.02	.25	-.10	.21
XI	-.17	-.08	.17	.52	.14	-.39	.41	.09	.13	-.03	-.25	.07	-.43	-.14	.32
XII	-.33	.07	.40	-.63	.24	.25	.00	.20	-.30	-.44	.09	.41	-.44	-.09	.30
XIII	.36	-.10	-.02	-.01	.00	-.22	.06	.09	.12	-.60	.22	.58	.54	-.10	-.16
XIV	.13	-.08	.11	.12	.55	.32	.09	-.48	-.39	-.35	-.33	-.38	.22	.13	.08
XV	-.26	-.16	.08	.37	-.25	.10	.06	.29	.14	-.27	.84	-.42	-.02	-.37	.51

Factor A, General Ability to Reason and Understand, has loadings of ±.25 on 22 of the 120 variables as follows:

Variable	Loading
General Reasoning	.64
Science & Mathematics	.59
Flexibility of Closure	.58
Visualization	.58
Inductive Reasoning	.54
Deductive Reasoning	.53
Elementary Education	.48
Word Fluency	.48
Associational Fluency	.47
Number Facility 1	.45
Number Facility 2	.45
Verbal Knowledge	.44
Social Studies	.40
Administration and Supervision	.40
Expressional Fluency	.39
Total Background Achievement	.36
Ideational Fluency	.34
Speed of Closure 1	.31
In-Basket Scorers' Rating	.29
Relates to Other Materials	.26
Speed of Closure 2	.25
Careless	-.26

This factor is clearly a general mental ability factor with primary emphasis upon abilities to reason and see relationships. The tests of professional knowledge and ability to learn new material (as measured by the test on the background material) appear with moderately high loadings on this factor. The minor loadings on the two in-basket test category scores--Relates to Other Materials (.26) and Careless (-.26)--are consistent with the interpretation of the factor as general ability to reason and see relationships.

Factor B is clearly identified as Superiors' Over-All Impression, as is indicated by the following loadings of ±.25 or higher.

Variable	Loading
Over-All Impression	.85
Getting Along with Supervisors	.75
Sticking to a Job	.74
Interest in Work	.74
Understanding	.73
Getting Along with Parents	.72
Knowledge of Administration	.71
Getting Along with Teachers	.65
Written Communication	.64
Knowledge of Teaching	.62
Oral Communication (Informal)	.61
Rapport with Children	.53

All of the 12 superiors' rating items that were included among the 120 variables have high loadings on this factor, the lowest loading being .53 for the item Rapport with Children and the highest .85 for Over-All Impression. No other variable has a significant loading on this factor; the next two highest loadings were .17. The factor can be clearly identified as superiors' over-all evaluation of the principal and may be accounted for in part by the familiar "halo" effect in rating.

Factor C is a bi-polar factor involving interest scores, basic personality factor scores, basic mental ability and professional knowledge test scores. It has been entitled Concern for Human Problems vs. Conventionality. The following variables have loadings of ±.25 or larger.

Variable	Loading
Lawyer	.58
I. Emotionally Sensitive	.50
City School Superintendent	.47
Psychologist	.43
Non-Conventional	.40
Verbal Knowledge	.37
Social Studies	.36

Variable	Loading
Elementary Education	.33
Sex (Women)	.25
G. Character Strength	-.43
Policeman	-.50

This factor is relatively complex with respect to the different types of variables involved. It appears to be defined at the positive pole by interests or personality factors indicative of sensitivity to social and human problems and perhaps an appreciation for an open-minded and understanding approach to working with people. At the negative pole this factor is defined by unusual regard for that which is practical, conventional, and orderly.

Factor D, like Factor C, is bi-polar and is defined by both interest and personality measures. It has loadings of ±.25 or larger for nine of the 120 variables. These identify a factor called Gregarious Friendliness vs. Independent Initiative.

Variable	Loading
E. Dominance	.48
H. Adventurous	.46
Public Administration	.46
F. Enthusiastic	.43
Policeman	.26
A. Friendly	.26
Sex (Men)	.26
Initiating Structure	-.25
Q_2. Self-Sufficiency	-.37

This factor is defined at the positive pole by dominance, adventurousness, enthusiasm, friendliness, and interest in work involving personal associations. At the negative pole are independence, reliance upon self-sufficiency, and a tendency to take the initiative (Initiating Structure).

Factor E is defined entirely by category scores from the in-basket tests. It has been labeled Involvement with Others in In-Basket Work and appears to be a mixture of the previous in-basket Factors C (Complying with Suggestions Made by Others), E (Maintaining Organizational Relationship), and G (Responding to Outsiders), It also resembles the second-order factor amount of work. The following 12 in-basket category scores have loadings of ±.25 on this factor.

Variable	Loading
Outsiders Involved	.63
Follows Outsiders	.55
Discusses with Superiors (or Outsiders)	.46
Superiors Involved	.43
Concluding Decision	.41
Informs Outsiders	.39
Communicates Face-to-Face	.37
Number of Words	.36
Follow Subordinates	.34
Prejudges	.25
Uncontrolled Delegation	.25
Delays	-.39

This factor appears to most closely resemble Factor E, *Maintaining Organizational Relationship*, of the original analysis of in-basket performance insofar as the higher-loaded category scores are concerned. It is, however, a much more inclusive factor and covers relationship with outsiders, superiors, and, to a lesser degree, subordinates. Both complying with their suggestions and involving them in problems, either through discussions or by giving them information, are entailed.

Factor F is clearly identifiable as Effective Participation in Group Interaction and with one exception is loaded only by scores from the group interaction problem. The exception is the rating made by staff members of the principals. This rating could easily have been influenced by the observations made by staff members of the behavior of the principals during their work on the group problem. The following eight variables have loadings of .25 or larger on Factor F.

Variable	Loading
Amount of Talking	.66
Presents Facts Effectively	.65
Makes Decisions Effectively	.65
Attempts to Influence	.59
Frequency of Interaction	.52
Suggests New Procedures	.45
Gives Positive Information	.43
Staff Members' Rating	.37

The first four of these variables are items from the Group Report Form that was completed by each participant at the conclusion of the group interaction problem. The remaining variables were produced by tabulations made by staff members who served as the experimenter and the observer. This factor clearly reflects the over-all impression the principal made upon others who observed or worked with them on the problem. The factor reflects in large part the amount of participation of the principal in the group interaction situation.

Factor G is a bi-polar factor involving only the personality test scores. It is easy to identify as Anxiety vs. Emotional Maturity. The following six personality factor scores have loadings of ±.25 on Factor G.

Variable	Loading
Q_4. Nervous Tension	.82
O. Insecurity	.77
L. Suspicious	.52
H. Adventurous	-.40
Q_3. Will Control	-.56
C. Emotional Stability	-.60

This factor is clearly defined positively by nervous tension, anxiety, suspiciousness, shyness, lack of purpose, and lack of frustration tolerance, and negatively by emotional maturity, self-confidence, trustfulness, character stability, and freedom from anxiety or nervous tension. It covers a large proportion of the usual indicators of personal adjustment.

Factor H is clearly the same factor identified as Analyzing the Situation (Factor D) in the factor analysis of the in-basket test scoring categories, the same name will be used for Factor H. The following variables have loadings of ±.25 or larger on this factor.

Variable	Loading
Conceptual Analysis	.68
Program Values	.66
Human Values	.34
Recognition for Good Work	.30
Uncontrolled Delegation	-.25
Number Facility 1	-.28

The key to identification of this factor is, of course, the high loadings for Conceptual Analysis and Program Values. The two in-basket categories defined the in-basket performance Factor D. The categories Human Values and Recognition for Good Work were observed in previous discussion to be correlated positively with Factor D (Chapter XII). The negative loadings of Uncontrolled Delegation and Number Facility 1 (speed of manipulation of overlearned symbols) may be indicative of a set toward quickly disposing with matter seen as routine detail which is in opposition to a set toward broad situational analysis.

Factor I is very similar to the in-basket factor identified before as Directing the Work of Others. The following variables have loadings of ±.25 on Factor I.

Variable	Loading
Leading Action	.75
Courtesy to Subordinates	.74
Directs	.73
Informs Subordinates	.41
Number of Words	.34
Sets Deadline	.34
Informality to Subordinates	.33
Courtesy to Outsiders	.30
In-Basket Scorers' Rating	.28

Although there are minor differences between this factor and its counterpart Directing the Work of Others found in the analysis of in-basket test performances, it will also be labeled Directing the Work of Others. The minor difference appears to be in the direction of emphasis upon directing the work of subordinates. The three in-basket categories Leading Action, Courtesy to Subordinates, and Directs, which were used in the computation of the composite score for Factor H and included among the 120 variables to represent the in-basket Factor H (Directing the Work of Others), clearly have the highest loadings on this factor.

Factor J is defined by the six categories of job performance values that were used in scoring the principals' responses to the problems that were presented by tape recordings. This factor has been entitled Job Performance Values. Loadings of ±.25 or larger are as follows:

Variable	Loading
Pupil Personnel	.53
Instruction and Curriculum	.53
Employee Personnel	.52
Public Relations	.44
Physical and Fiscal Organization	.40
Planning and Structure	.33

This is clearly a factor generated by the procedure used in obtaining the responses or the method used in scoring them, or both.

Factor K is almost a residual factor but does have an interpretable set of very small loadings for categories from the in-basket test. These loadings are as follows:

Variable	Loading
Terminal Action	.30
Concluding Decision	.27
Follows Subordinates	.27
Total Background Achievement	.26
Controlled Delegation	-.28

This factor may be labeled to correspond with Factor C from the in-basket test analysis, since the three highest positive loadings are for the three categories that defined Complying with Suggestions Made by Others. To indicate its near-residual character, the title Complying with Suggestions (Residual) has been selected.

Factor L is defined entirely by the three scores that were obtained from the reports of the principals' teachers. These loadings are as follows:

Variable	Loading
Teachers' Reaction	.83
Consideration	.77
Initiating Structure	.38

This factor again may be generated by the procedure used in obtaining the data, i.e., asking teachers to fill out inventories concerned with their impressions of their principals. It has been labeled simply Teachers' Impressions.

Factor M is defined largely by data from biographical sources. It has been labeled Age and Experience because of the clear pattern of the loadings for these items.

Variable	Loading
Total Years in Professional Work	.77
Age	.76
Total Years in Administration	.64
Sex (Women)	.31
Psychologist	-.25
Total Years of Academic Preparation	-.25
Speed of Closure 2: Gestalt Completion	-.38

The small loadings on Psychologist, Years of Academic Preparation, and Sex are probably indicative of recent changes in the methods of selecting and preparing elementary school principals. Performance on the Gestalt Completion Test has been shown in previous research to decline sharply with age in adults.[3]

Factor N is very similar to the second-order Factor X from the analysis of the in-basket category scores, and has been given the same title, Preparing for Decision vs. Taking Final Action. The following pattern of loadings are close to the saturation of these categories with Factor X (indicated to the right in parentheses).

Variable	Loadings
Discusses with Subordinates	.66 (.60)
Communicates Face-to-Face	.61 (.55)
Decides on Procedure	.60 (.69)
Immediate Work Scheduled	.51 (.61)
Intermediate Work Scheduled	.37 (.54)
Discusses with Superiors (or Outsiders)	.36 (.26)
Asks Subordinates	.25 (.56)
Outsiders Involved	.25 (.10)
Concluding Decision	-.44 (-.52)
Terminal Action	-.66 (-.62)

The appearance of the second-order factor from the analysis of in-basket test categories as a first-order factor in this 120 variable, objectively-rotated analysis gives added support to the existence of such a factor. The emphasis that has been placed upon Preparation for Decision as a central dimension of elementary school administration thus is supported.

Factor O is defined by the 11 categories of instructional awareness that were used to describe the concerns expressed by the principals in preparing the probationary reports and outlines of interview after viewing the kinescopes. This factor has been labeled Instructional Awareness. The 12 variables have loadings on Factor O as follows:

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[3] Basowitz, Harold and Korchin, Sheldon J. "Age Differences in Perception of Closure." Journal of Abnormal and Social Psychology 54: 93-97, 1957.

Variable	Loading
Interest	.60
Planning	.52
Curriculum	.51
Participation	.49
Methods	.48
Objectives	.47
Growth	.41
Evaluation	.40
Climate	.38
Classroom	.37
Personality	.28
Pupil Education	.27

The twelfth variable Pupil Education is from the values expressed by the principals during their study of background material. This factor is generated at least in part by the procedure of gathering and scoring the kinescope data, but the appearance of the small loading for a variable obtained in a somewhat different manner suggests that the factor is more than just a test-form factor.

Interrelationships among the Fifteen Factors A through O

The correlations among these 15 factors are perhaps of as much interest as their identification and interpretation. For the most part, the 15 factors were either noted in previously reported analyses or were associated with specific techniques or procedures used in carrying out the study. The factors were obtained by an oblique rotation method; their intercorrelations provide an over-all framework from which to view the entire study. Answers to such questions as "What is the relationship between superiors' and teachers' impressions of the same principal?" or "Is age and experience important in determining whether a principal prefers to prepare for decision rather than take final action?" are contained in the intercorrelations of these factors.

Table E-2 presents the intercorrelation among the 15 oblique factors which have been identified in this section.

Examination of the correlations among the factors as reported in this table may begin with the two factors that reflect evaluations of the principals in the local school situation. These are Factor B, *Superiors' Over-All Impression*, and Factor L, *Teachers' Impressions*; they are related by a small positive correlation of .11.

Superiors' impressions are positively related to Factor N, *Preparation for Decision vs. Taking Final Action* (r = .18), Factor J, *Job Performance Values* (r = .17) and Factor O, *Instructional Awareness* (r = .16). All the relationships are small. Apparently superiors' impressions are created by variables other than those reflected in the correlations of Table H-2. One such variable of possibly great significance is the in-basket test factor, *Exchanging Information*, which has been discussed. It would seem, however, that superiors' ratings are questionable, to say the least, as criteria of the administrative performance of their principals. Their low general relationship with other evidence of quality of this performance can be viewed as an indication of the low basic relevance of such ratings, perhaps because of their superficiality.

Teachers' impressions apparently are influenced positively by the gregarious friendliness (Factor D, r = .36) of the principals, the job performance values of the principals (Factor J, r = .20) and negatively by the principal's exercise of independent initiative and his tendency toward analysis of the situation (Factor H, r = -.24). It appears that the principal who interacts freely and in a pleasant manner with his teachers, shows an interest and concern in their problems and refrains from taking an independent analytical attitude toward administration is regarded favorably by them.

TABLE E-2. INTERCORRELATIONS AMONG 15 FACTORS OF THE OVER-ALL STUDY

Factor Names	Factor														
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
A General Ability to Reason and Understand		.12	.23	.06	.17	.25	.02	.13	.20	.19	.22	.08	-.27	.37	.26
B Superiors' Over-All Impression	.12		.13	-.05	.06	.12	-.07	.02	.10	.17	-.02	.11	.00	.18	.16
C Concern for Human Problems vs. Conventionality	.23	.13		-.09	-.02	.12	-.02	.23	.40	.18	-.14	-.10	.20	.22	.23
D Gregarious Friendliness vs. Independent Initiative	.06	-.05	-.09		.00	.15	-.05	-.09	-.22	-.07	.04	.36	-.12	.05	-.10
E Involvement with Others in In-Basket Work	.17	.06	-.02	.00		-.03	-.04	-.05	.14	.14	.21	-.01	-.02	-.10	.13
F Effective Participation in Group Interaction	.25	.12	.12	.15	-.03		-.01	.10	.20	.14	-.04	.15	-.11	.17	.08
G Anxiety vs. Emotional Maturity	.02	-.07	-.02	-.05	-.04	-.01		-.06	.00	.07	.02	.02	.01	-.05	-.03
H Analyzing the Situation	.13	.02	.23	-.09	-.05	.10	-.06		.28	-.13	-.48	-.24	-.01	.06	.00
I Directing the Work of Others	.20	.10	.40	-.22	.14	.20	.00	.28		.11	-.23	-.11	.09	.11	.21
J Job Performance Values	.19	.17	.18	-.07	.14	.14	.07	-.13	.11		.22	.20	.14	.15	.34
K Complying with Suggestions (Residual)	.22	-.02	-.14	.04	.21	-.04	.02	-.48	-.23	.22		.16	-.20	.26	-.07
L Teachers' Impressions	.08	.11	-.10	.36	-.01	.15	.02	-.24	-.11	.20	.16		-.04	.07	.12
M Age and Experience	-.27	.00	.20	-.12	-.02	-.11	.01	-.01	.09	.14	-.20	-.04		-.10	.27
N Preparing for Decision vs. Taking Final Action	.37	.18	.22	.05	-.10	.17	-.05	.06	.11	.15	.26	.07	-.10		.21
O Instructional Awareness	.26	.16	.23	-.10	.13	.08	-.03	.00	.21	.34	-.07	.12	.27	.21	

General Ability to Reason and Understand (Factor A) is positively related to all of the factors that pertain to different parts of the principal's total performance. These include *Preparing for Decision vs. Taking Final Action* (Factor N, $r = .37$), *Instructional Awareness* (Factor O, $r = .26$), *Effective Participation in Group Interaction* (Factor F, $r = .25$) and *Job Performance Values* (Factor J, $r = .19$). The relationships of this general ability with *Age and Experience* tend to be negative ($r = -.27$); however, *Age and Experience* shows positive correlation with Factors J and O. It would appear that effective performance of the principals in a strictly administrative role depends more upon his general ability to reason and understand problems than his experience, but that experience is required for effective work in the areas of the job that pertains to his supervision of educational activities--a part of the total task of elementary school administration that is valued by both his superiors and his teachers.

The relationship between the variables upon which the 15 factors are based and performance on the in-basket test problems has been examined in great detail in Chapter XIII. The general relationship shown in Table E-2 between Factors E, H, I, K, and N, all of which are factors involving in-basket test performance, and the other factors can add very little to that exhaustive analysis and will not be considered here except to observe that they are consistent with the earlier analyses.

APPENDIX F

Some Notes on Administrative Performance and System Theory

Some Notes on Administrative Performance and System Theory

Theories are made to be used, revised, superseded, and eventually discarded. As they lead to new knowledge, new theories are needed to give this knowledge form and meaning. A theory is useful to a researcher because it gives him a benchmark from which to start, not a mooring against which to rest. Some ideas regarding a theory of administrative performance are presented here.

This appendix is organized in four statements:

1. Description of Administrative Performance

   The general findings of the study provide concepts for the description of administrative performance.

2. Model

   A system model is presented as the basis for developing a theory of administrative performance.

3. Assumptions

   Two assumptions which indicate an over-all orientation to administration are presented.

4. Theory

   The isomorphism of the theory to the model is discussed, and two propositions are stated and discussed to demonstrate the possible application of the theory.

Statement of Description

This theory is not concerned with administration generally, but is limited in its range to administrative performance which is defined simply as how an administrator does his work. The description of administrative performance used in this theory is that contained in the body of this report and is summarized in Figure XIII-1.

Statement of the Model

The model used in this appendix is called *system theory* which is an outgrowth of a relatively new organismic conception reflected in the work of Von Bertalanffy and Goldstein and in certain aspects of Gestalt psychology. It opposes simple reaction theories, where a virtual automaton is seen to respond discretely to stimuli.

A system is simply defined as *a complex of elements in mutual interaction*. System is a construct which has been used in almost every area of science for a long period of time. Floyd Allport offers a more comprehensive definition of system indicating it to be:[1]

> ...any recognizable delimited aggregate of dynamic elements that are in some way interconnected and interdependent and that continue to operate together according to certain laws and in such a way as to produce some characteristic total effect. A system, in other words, is something that is concerned with some kind of activity and preserves a kind of integration and unity; and a particular system can be recognized as distinct from other systems to which, however, it may be dynamically related. Systems may be complex; they may be made up of interdependent sub-systems, each of which, though less autonomous than the entire aggregate, is nevertheless fairly distinguishable in operation.

A more succinct definition is that of Hall and Fagen, "A system is a set of objects together with relationships between the objects and between their attributes."[2] This means that a system is composed of *objects* which are the parts of the system; and that there are relationships among the objects and their attributes which tie the system together. Systems may be *open* or *closed*. An open system is related to and exchanges matter with its environment while a closed system is not and does not. Further, a closed system is characterized by entropy or a state of equilibrium, while open systems tend towards the *steady state*. All systems except the smallest have sub-systems and all but the largest have suprasystems which are their environments.

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[1] Floyd H. Allport, *Theories of Perception and the Concept of Structure*, New York: John Wiley and Sons, 1955, p. 469.

[2] A. D. Hall and R. E. Fagen in *General Systems - Yearbook of the Society for the Advancement of General Systems Theory*, Ludwig Von Bertalanffy and Anatol Rapoport, eds. Ann Arbor: Braun-Brumfield, 1956, p. 18.

Properties of Organismic, Open Systems

Open systems, of course, have the properties of systems in general, but open systems have certain characteristics which distinguish them from closed systems.[3]

1. Open systems exchange energy and information with their environment: that is, they have *inputs* and *outputs*.

2. Open systems tend to maintain themselves in *steady states*. A steady state is characterized by a constant ratio being maintained among the components of the system. A burning candle is often used to illustrate one aspect of a steady state. Upon being lighted the flame is small, but grows rapidly to its normal size and maintains this size as long as the candle and its environment exist.

3. Open systems are self-regulating. In the illustration above, a sudden draft will cause the flame to flicker, but with the cessation of the draft the flame regains its normal characteristics.

4. Open systems display *equifinality*; that is, identical results can be obtained from different initial conditions.

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[3] Adapted from Gordon Hearn, *Theory Building in Social Work*, Toronto, University of Toronto Press, 1958. pp. 44-50.

5. Open systems maintain their steady states, in part, through the *dynamic interplay of sub-systems operating as functional processes*. This means that the various parts of the system function without persistent conflicts which can neither be resolved nor regulated.

6. Open systems can maintain their steady state through *feedback processes*.

7. Open systems display progressive segregation.[4] This process occurs when the system divides into a hierarchical order of subordinate systems which gain a certain independence of each other. Hearn summarizes the properties of open, organismic systems in this manner:[5]

> There is a dynamic interplay among the essential functional subprocesses or sub-systems in the organismic system which enables it to maintain itself in a homeostatic steady state. Assuming a sufficient input of material from its environment, the organism develops toward a characteristic state despite initial conditions (equifinality). All of this is accomplished through an automatic self-regulatory process.

Statement of Assumptions

Two very general assumptions are made concerning administrative performance.[6]

1. *Administrative performance is a generalized type of behavior to be found in all human organizations.*

Administration is a term used to describe an aspect of behavior in a social organization. Since there are few aspects of behavior unrelated to some social organization, administrative performance is a vital and pervasive aspect of all human behavior. An extension of this point-of-view is that the adjectival varities of administrative performance are alike rather than different. Administrative performance in a business enterprise, a hospital, a military unit, an industrial plant or a school has some apparent unique variance, but the common variance of the performance among different settings is a valid area for theoretical focus. Further, administrative performance is not to be thought of in terms of the behavior of a single person: "the administrator." Administrative performance is, rather, conceived of as an abstraction from behavior which might be present in organizations even though there were no one formally designated as an administrator.

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[4] Ludwig Von Bertalanffy, "An Outline of General Systems Theory," *British Journal for the Philosophy of Science*. Vol. 1, 1950, p. 148.

[5] Hearn, pp. 48, 49.

[6] For an elaboration of these assumptions in a different framework see Daniel E. Griffiths, *Administrative Theory*, New York: Appleton-Century-Crofts, 1959.

2. *Administrative performance involves the directing and controlling of behavior in a social enterprise.*

This assumption means that administrative performance has as its purpose the implementation of the goals for which an organization is designed. The implementation is through such procedures as establishing criteria for the performance of individuals as they interact in the organization and establishing controls to make certain that performance agrees with plans. Administrative performance is not an artificial function superimposed on the normal activities of human beings; it rather involves the process (cycle of events) engaged in by the members of a social organization in order to control and direct the activities of the members within the organization. It can be said that administration is not the production of the organization. Barnard stated this quite clearly when he said, "Executive work is not that *of* the organization, but the specialized work of *maintaining* the organization in operation."[7]

A Theory of Administrative Performance

It is proposed that system theory serve as a model for a theory of administrative performance. As indicated above, any system exists with subsystems and within suprasystems, but that all this means is that there are related systems of different sizes. A school district is a system comprised of human interactions which maintains a definite boundary. The school district exists in a larger system of human interactions called the school community. Existing within the school district is the system of human interactions occuring at the school building level. Thinking only of the system at the building level, attention is to be focused upon the administrative performance system. It is located at the point of tangency of the boundaries of the school building system, the school district system, and the school community system. (Figure 1)

An individual person, of course, may be considered to be a system -- an open, organismic system.[8] But the principal as a person system is not the focus of attention here. Rather the focus is upon the administrative performance system which at many points, but not all, may coincide with a system of a specific person. In most instances, the administrative performance system is comprised of many people; however, this report of research deals with an instance in which there is but one administrator, making it the simplest type of administrative performance system.

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[7] Chester I. Barnard, *The Function of the Executive*, Cambridge: Harvard University Press, 1938, p. 215.

[8] James G. Miller, "Toward a General Theory for the Behavioral Sciences," *The American Psychologist*, 10, 1955, p. 521.

Relation of Model

The first question to be raised is, "Is the administrative performance of school principals isomorphic to systems theory?" In other words, can administrative performance be conceptualized as a system? In order for there to be a complete isomorphism, there must be a one to one relation between the elements of the system and the elements of performance, and the elements of the system must bear the same relationship to one another as do the elements of performance. The test to be applied is to raise the question, "Is it possible to state certain propositions, derived from systems theory which may be demonstrated to apply to a school principal?"

Performance as a System

In order for performance to be considered as a system, it must exhibit the properties of a system. The description of administrative performance has been the major concern of the research study reported above. The findings of the study are summarized in a general way by the eight primary factors and the two second order factors found in the analysis of the in-basket work of the principals. Seven properties of open organismic systems were noted above. It is of interest to compare the findings of the study with the formal properties of an open system.

1. Input-Output

Administrative performance is conceptualized as a system existing at the point of tangency of several systems, including the school community, the school district, and the school building unit. All open, organismic systems exhibit an input-output function. Evidence of input-output are certainly clear in the administrative performance system. Factor A, Exchanging Information, is clearly an input-output factor. The performance system exchanges information with the school unit system, the school district, and the community. Factor G, Responding to Outsiders, indicates not only exchanging information with the community system, but in responding to the demands of that system. Output dimensions are noted in Factor H, Directing Others, and Factor C, Complying with Suggestions. There is abundant evidence that the administrative performance system does exchange energy and information with its environment. It has an input and an output.

2. Steady States

A steady state is evidenced by a constant ratio being maintained among the components of the system. Many of the findings of the study can be understood as expressions of a system maintaining itself in a steady state. The principals displayed a singular lack of concern with organizational changes or the initiation of new procedures. Comments have already indicated the need to consider leadership and administration as separate and distinct. One way to understand such a dichotomy is in terms of the maintenance of a steady state within a performance system. While a steady state was observed, it must be noted that this was not a constant state. There was some change, generally as a result of stimuli from the environment.

Since the study was essentially cross-sectional in nature and no feedback was introduced, little can be said that is based upon this about the steady state. A study employing simulation, but longitudinal in nature, should be undertaken. It would then be possible to study the characteristics of this steady state over a period of time.

3. Self-regulation

When a system is disturbed, but re-establishes itself, self-regulation is apparent. There is little evidence from the study which can be brought to bear on this property. The same comments are appropriate here as are made under number 2.

4. Equifinality

This property refers to the observed fact that identical results can be obtained from different initial conditions. Referring to Figure 1 we note the position of the performance system as being tangential to the other three systems. The function of the performance system is to handle information and energy from all sources and to make decisions on what are perceived as problems. Factor X is noted to be a decision factor (see Table F-I). This factor was found to involve all of the primary factors, except Factor E, Maintaining Relationships. The important point to note is that the average performance of administrators can be plotted on the continuum from "Preparing to Decide" through to "Taking Terminal Action." Taking terminal action on a problem may be viewed as the final step of the process described as administrative performance. There is no indication that all principals go through all the stages of decision-making, but that once a problem is perceived, the terminal decision appears to be the end to be reached by entry at any place in the stages of decision making. This is not to say, however, that the same final decision could be expected by entering the decision continuum at different places.

5. Subsystems

The subsystems of the administrative performance system were not directly indentified by the study. There are some leads, however. The factors can be considered as suggesting subsystems; thus there might be a communications system, a leadership system, and a group maintenance system.

TABLE F-I

Stages in Decision-Making with Appropriate In-Basket Scores and Their Loadings on Factor X

Stages in Decision-Making	In-Basket Scoring Categories	Loadings on Factor X
1. Recognizes a problem		
2. Prepares to clarify the problem	Arrives at a procedure for deciding	.69
	Requires further information for deciding	.63
3. Initiates work on the problem	Work scheduled for same or next day	.61
	Discusses with subordinates	.60
	Asks subordinates for information	.56
	Takes leading action	.41
4. Organizes and judges facts and opinions	Conceptual analysis	.24
	Tentative or definite plans only	.16
	Delays, postpones	.15
5. Selects alternative solutions	Follows lead by superiors	.09
	Follows lead by subordinates	-.10
6. Decides and acts	Concluding decisions	-.51
	Terminal action	-.62

Subsystems might be construed in more traditional terms as the functions of an organization, and so there might be a supervision system, a planning system and the like. While it seems clear that there are subsystems, just what they are is not clear.

6. Feedback

Factor A, Exchanging Information, Factor C, Complying with Suggestions, Factor E, Maintaining the Organization, and Factor G, Responding to Outsiders, all reflect the presence of feedback activities, that is, responses to disturbance in the steady state. This study has little evidence to bear on feedback as a dynamic aspect of the administrative performance system, since the subjects received no feedback from their own work. Another study is needed to provide evidence of this nature.

7. Progressive Segregation

Little information has been gained concerning the structuring of the subsystems of the administrative performance system. Evidence on this property of open systems will have to wait on later research. Once subsystems are identified, it is predicted that they would tend to fall into a hierarchical order.

Propositions

As Meadows has pointed out:[9]

> The scientist wishes to predict, and the model becomes, thus a device by which assumptions are transformed into postulates. Models, then, are techniques of inference-making.

The system model presented here could lead to a number of propositions, all of which would need more research. Two propositions will be discussed

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9/ Paul Meadows, "Models, Systems and Science," American Sociological Review, Vol. 22, No. 1, February 1957, p. 8.

simply as illustrations.

A question of major importance is, "By what means is the steady state of the administrative performance system maintained?" The structure of the system, its location as tangential to other systems, the nature of the input and output would lead one to believe that the system tends to avoid extreme positions and to prefer to maintain a relatively even keel. This leads to proposition 1.

Proposition 1 - The steady state of the administrative performance system is maintained by a decision process in which satisfactory alternatives are selected rather than optimal alternatives.

Discussion -- Simon has suggestions that administration man satisfies rather than maximizes. As he has said,[10]

> 1. While economic man maximizes--selects the best alternatives from among all those available to him; his cousin, whom we shall call administrative man, satisfices--looks for a course of action that is satisfactory or "good enough." Examples of satisficing criteria that are familiar enough to businessman, if unfamiliar to most economists, are "share of the market," "adequate profit," "fair price."
>
> 2. Economic man deals with the "real world" in all its complexity. Administrative man recognizes that the world he perceives is a drastically simplified model of the buzzing, blooming confusion that constitutes the real world. He is content with this gross simplification because he believes that the real world is mostly empty--that most of the facts of the real world have no great relevance to any particular situation he is facing, and that most significant chains of causes and consequences are short and simple. Hence, he is content to leave out of account those aspects of reality--and that means most aspects--that are substantially irrelevant at a given time. He makes his choices using a simple picture of the situation that takes into account just a few of the factors that he regards as most relevant and crucial.
>
> What is the significance of these two characteristics of administrative man? First, because he satisfices, rather than maximizes,

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[10] Herbert Simon, Administrative Behavior, New York: Macmillan, 1957, pp. xxv-xxvi.

> administrative man can make his choices without first examining all possible behavior alternatives and without ascertaining that these are in fact all the alternatives. Second, because he treats the world as rather "empty," and ignores the interrelatedness of all things (so stupefying to thought and action), administrative man is able to make his decisions with relatively simple rules of thumb that do not make impossible demands upon his capacity for thought.

Simon regards this explanation of administrative decision-making as verified both by common sense reasoning and through work with machine stimulated thought processes.[11]

Several of the scoring categories are related to the choice of alternatives. Such categories as Following Leads by Superiors and Subordinates, Making Concluding Decisions, and Taking Terminal Action could be considered as indicating that the principals restricted their world to their immediate associates and made decisions in terms of what they learned from them. Such categories as Conceptual Analysis and Uses Program Values could be considered as indicating that the principals attempted to analyze the item, to see its broad implications, and to relate the item to background information or to other items. The former was much more prevalent than the latter.

It would appear that the steady state of the administrative performance system is one in which there is more satisficing than maximizing.

> Proposition 2 - Administrative systems respond continuously increasing stress first by a lag in response, then by an over-compensating response, and finally by a catastrophic collapse of the system.[12]

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[11] Ibid. pp. xxvi-xxviii.

[12] James G. Miller, "Toward a General Theory for the Behavioral Sciences," American Psychologist, Vol. 10, 1955, p. 525.

Discussion -- There is some evidence which indicates that moderate stress lifts performance above ordinary levels, but that extreme stress may cause performance to deteriorate. In the study the subjects indicated that, during the test week, they were under more stress than usual, but that they produced more than normally. The intriguing question is, "How much stress can the administrative performance system take before it collapses?" Another way of putting the question is, "What is the optimum stress which should be placed on a system so as to produce optimum performance?" There is no definitive evidence on this at present, but a rigorous testing of this proposition would provide extremely important information.

Summary

This appendix has presented some tentative ideas on a theory of administrative performance. System theory was used as a model, certain assumptions were stated, and the model was examined for isomorphism with the administrative performance system. Two propositions were derived from the model and discussed briefly.

It is suggested that the use of system theory as a model for the study of administrative performance offers much that would be both interesting and profitable.

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